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PHASE III GROUNDWATER QUALITY ASSESSMENT WILMINGTON, NORTH CAROLINA FACILITY

Prepared For

SOUTHERN WOOD PIEDMONT COMPANY
SPARTANBURG, SOUTH CAROLINA

Prepared By The

ViroGroup
Air • Water • Soil
TECHNOLOGY

ETE Division

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PHASE III GROUNDWATER QUALITY ASSESSMENT
SOUTHERN WOOD PIEDMONT
WILMINGTON, NORTH CAROLINA FACILITY

1.0 BACKGROUND

The Southern Wood Piedmont (SWP) facility is located in an industrialized area adjacent to the eastern bank of the Cape Fear River within the city limits of Wilmington, North Carolina (Figure 1). The facility is bounded to the north by Amerada Hess Corporation Fuel Tank Farm and to the south by Greenfield Creek. Across Greenfield Creek from the facility is the Poctank, Inc. Tank Farm. Optimist Park and residential areas are located to the east of the facility and the Cape Fear River is located to the west. Greenfield street, which runs in an east-west direction, terminates at the SWP facility.

The facility is situated on two parcels of land that are currently leased to Southern Wood Piedmont. The southern parcel is owned by the North Carolina Ports Authority and the northern parcel by the City of Wilmington. A topographic map for the site and adjacent properties has been prepared and is presented in Figure 2. Wetland areas and existing structures are shown on the topographic map.

1.1 Site History

Prior to 1921, E.R. Eubank Sawmill may have occupied the site. Early Sanborn maps indicate that Newport Shipbuilding Company was operating on-site in 1921. In 1932, the North State Treating Company leased the property. Taylor Colquitt Company acquired the property in 1935 and continued to treat wood products with creosote. In 1964, Taylor Colquitt Company changed names to Taylor Piedmont. International Telephone & Telegraph (ITT) purchased Taylor Piedmont in 1969. Early in 1971, ITT changed the company name to Southern Wood Piedmont. Southern Wood Piedmont operated the wood preserving facility until June 1983. At this time wood treating operations ceased and closure operations commenced at the facility.

The wood preservatives used during plant operations included creosote coal tar, pentachlorophenol (PCP), and copper, chromate, and arsenate (CCA). Creosote was used throughout wood preserving operations, whereas, CCA treatment was added by SWP in the early 1970's followed by pentachlorophenol in the late 1970's. Wood-preserving chemicals were stored on-site in aboveground storage tanks adjacent to the respective treating facilities. Additional tanks for creosote storage were located in the southwestern portion of the facility adjacent to the Cape Fear River.

2.0 PREVIOUS SITE ACTIVITIES

This section provides an overview of previous site activities. Previous site activities include a soil and groundwater investigation completed by the City of Wilmington on their parcel of land,

the construction and operation of an on-site landfarm by SWP through an Administrative Order of Consent with the North Carolina Department of Health, Environment, and Natural Resources, a site-wide near-surface soil investigation, and Phase I and II groundwater quality investigations at the facility.

2.1 City of Wilmington Investigation

Five soil borings were advanced on the City of Wilmington parcel to a depth of approximately 50 feet below land surface by Soil and Materials Engineers, Inc., (SME) during 1981. Lithologic logs indicate that a surficial aquifer of sandy fill material, which varies from less than 1 foot to 18 feet in thickness, is present beneath the City of Wilmington parcel. Below this sandy material is a layer consisting of dark brown, organic-rich silt and peat, which contains traces of fine sand and roots. This layer ranges in thickness from 5 to 19 feet and increases in thickness towards the Cape Fear River to the west. Fine to medium sands extend from below the organic-rich layer to a depth of 42 to 45.5 feet below land surface. A marl is present below this depth.

Each of the five exploratory soil borings were converted to monitoring wells (designated City monitoring wells [CW] on the site map; Figure 3). Four of the monitoring wells (CW-1, CW-2, CW-3, and CW-4) were screened above the organic layer (peat) and one well (CW-5) was screened in the sand below the organic layer. Groundwater samples were collected for inorganic and volatile priority pollutants. Wood-preserving constituents were detected in CW-2 adjacent to the wood treating facility.

Based on their observations, SME concluded that the dominant direction of shallow groundwater flow at the site was to the south, parallel to the Cape Fear River. For additional information on the City of Wilmington investigation, please refer to the report by Soil and Materials Engineers, Inc. entitled: GEOTECHNICAL INVESTIGATION REPORT, CITY OF WILMINGTON PROPERTY LEASED BY SOUTHERN WOOD PIEDMONT, WILMINGTON, NORTH CAROLINA, dated 1981.

2.2 State of North Carolina Administrative Order of Consent

On May 20, 1985, Southern Wood Piedmont Company and the Solid and Hazardous Waste Management Branch, Environmental Health Section, Division of Health Services, Department of Human Resources of the State of North Carolina entered into an Administrative Order of Consent. The Administrative Order of Consent addressed soil and groundwater contamination at the site and provided clean-up/remedial action which should minimize the site's impact on the environment and public health in a manner which is consistent with the State and Federal hazardous waste laws and rules.

The Administrative Order of Consent allowed land treatment (landfarm) of preservative residuals in contaminated soil to reduce the residuals to an acceptable level. The location of the landfarm was selected to be in a previous treated pole storage area where there are presently low levels of preservative residuals in the soil.

Pursuant to the terms of the Administrative Order of Consent, soil containing preservative residuals were excavated from the covered sludge ditch, the track area in front of the treatment cylinder, the area in the vicinity of the treatment buildings, and the large storage tank containment area and placed in the landfarm for on-site treatment. The treated pole storage areas not used for landfarming were tilled in place. Soil in the vicinity of the CCA storage tank area was excavated and sent off-site to a permitted land disposal facility and the CCA storage tank sludge was disposed in a hazardous waste landfill. The sludge from the bottom of the various oil storage tanks was placed in an approved landfill or burned for fuel recovery in an off-site location.

Once the terms of the Administrative Order of Consent have been met, the properties will be returned to the City of Wilmington and the North Carolina Ports Authority for development.

2.2.1 Landfarm Operation

In cooperation with the North Carolina Department of Human Resources, Solid and Hazardous Waste Management Branch, SWP operated a landfarm to remediate soil containing wood-preserving residuals. Following the removal of the existing railroad spurs and plant buildings at the facility, a 5-acre area was bermed and ditched for landfarm operations. Excavated wood preserving constituent influenced soil was landfarmed between July 1984 and April 1990. Landfarm treatment included the placement of influenced soil in 2-inch lifts on the landfarm. Each lift was treated by weekly tilling and adding irrigation water, fertilizer, and chicken and turkey manure to promote microbial growth and wood preserving constituent degradation. The landfarm is located on the northwest portion of the site in the area bounded by monitoring wells MW-6, MW-7, MW-8, and MW-9 (Figure 3).

Soil samples were collected periodically between September 1985 to April 1990 throughout the active period of landfill operation. The soil samples were analyzed for soil nutrients, pentachlorophenol, PAHs, phenol, and microbial counts. The soil sampling results indicated that the landfarms were effective and that constituents of concern were not leaching into the substrate soils. Subsequent to active landfarm operations, Geraghty & Miller, Inc. collected soil samples in October 1990 and again in October 1991. Analytical results from the post-operational soil sampling indicated minimal migration of constituents of concern into the substrate soils from the landfarm. For further information on the landfarm activities and findings please refer to the reports by Geraghty & Miller, Inc. entitled: DATA SUMMARY REPORT FOR THE 1990 LANDFARM AREA SAMPLING, SOUTHERN WOOD PIEDMONT COMPANY,

WILMINGTON, NORTH CAROLINA and DATA SUMMARY REPORT FOR THE 1991 LANDFARM AREA SAMPLING AND COMPARISON OF 1990 AND 1991 SOIL AND GROUND-WATER DATA, SOUTHERN WOOD PIEDMONT COMPANY, WILMINGTON, NORTH CAROLINA dated September 1993.

2.2.2 Landfarm Groundwater Monitoring

In September, 1985, Law Environmental Services (LES) installed four groundwater monitoring wells around the limits of the landfarm (MW-6, MW-7, MW-8, and MW-9). Each well was installed to an approximate depth of 20 feet below land surface such that the upper portion of the screen bracketed the contact between the fine to medium upper sands and the underlying peat.

In order to evaluate the direction of groundwater flow within the uppermost aquifer LES collected water table elevations from 8 of the existing monitoring wells and the Cape Fear River at the facility. Based on this data groundwater flow around the limits of the landfarm appeared to be northwest, west, and southwest toward the Cape Fear River.

Hydraulic conductivity testing was also conducted by LES on monitoring wells MW-6 through MW-9. Horizontal hydraulic conductivity values ranged from 3×10^{-5} cm/sec to 1×10^{-6} cm/sec, which is typical of silty sediments (the peat unit at the facility is comparable in hydraulic conductivity to silty sediments). Also, the average groundwater flow velocity was evaluated to be 0.1 feet per year for the screened interval.

Additional information on the groundwater monitoring in the landfarm area can be found in the Law Environmental Services report entitled: MONITORING WELL INSTALLATIONS AND HYDROGEOLOGIC REPORT dated November 27, 1985.

2.2.3 Risk Assessment of Landfarm Areas

A risk assessment has been conducted by Geraghty & Miller, Inc. for the two landfarm treatment areas at the former SWP wood treating facility. The purpose of the risk assessment was to evaluate the wood-preserving constituents remaining in the landfarms and any potential risk to public health and/or the environment. It was assumed that the site will be used for future industrial development (deed restriction) and that several feet of fill and/or pavement will cover the landfarm.

As a result of the assumed future site use and development, the only exposure to constituents remaining in the landfarm soils would occur during the construction period. Therefore, the risk assessment evaluated the potential exposure to a site construction worker. Constituent intake was evaluated for incidental soil ingestion, dermal contact, and inhalation of dust. An exposure

period of 13 weeks, 6 days per week, and 8 hours per day was evaluated. Thirteen weeks was selected as a reasonable maximum period required for grading, filling, and paving the site.

Constituents of concern (COCs) included in the risk assessment were PAHs, phenol, dimethylphenol, trichlorophenol, tetrachlorophenol, pentachlorophenol, arsenic, copper and chromium. The analytical results of 70 samples were utilized during the risk assessment.

Risk estimates for the site construction worker were compared to USEPA target risk criteria to determine if the terms of the Administrative Order of Consent had been met. The USEPA currently uses a target excess lifetime cancer risk (ELCR) range of 1×10^{-4} to 1×10^{-6} and a hazard index (HI) of 1 to indicate if remediation is required. The total ELCR for the construction worker was calculated to be 6×10^{-6} and is within the target risk range; the HI is 0.5 and is below the target value of 1. These results indicate that the proposed development of the site could proceed without posing a significant risk to human health and the environment. For additional information regarding the landfarm risk assessment, please refer to the report by Geraghty & Miller, Inc. entitled: RISK ASSESSMENT REPORT FOR LANDFARM AREAS, SOUTHERN WOOD PIEDMONT COMPANY, WILMINGTON, NORTH CAROLINA dated December 1993.

2.3 Treated and Non-Treated Wood Storage Area Soil Sampling

Between February 26 and March 1, 1991, Geraghty & Miller, Inc. completed 92 soil borings and collected 48 soil samples from treated and non-treated wood storage areas at the facility. Each of the soil borings were completed to a depth of 18-inches below land surface and visually assessed for the degree of staining and odor. Randomly selected soil boring locations were sampled for select semi-volatile organic constituents and the metals, arsenic, chromium, and copper at depth intervals of 0- to 6-inches and 12- to 18-inches below land surface. A summary of the results of this investigation can be found in the letter report submitted to SWP on June 17, 1992 entitled: WILMINGTON, NORTH CAROLINA SOIL SAMPLING INVESTIGATION.

2.4 Phase I Groundwater Quality Assessment

During February 1992, Environmental Technology Engineering, Inc. (ETE) initiated field activities directed at characterizing the site hydrogeology and evaluating potential groundwater degradation associated with past wood preserving activities at the site. Activities completed during the Phase I groundwater quality assessment include monitoring well installation, visual soil quality evaluation, lithologic interpretation, groundwater flow/tidal influence evaluation, and groundwater sampling.

2.4.1 Monitoring Well Installation

During the Phase I groundwater quality assessment ETE installed 13 groundwater monitoring wells within the upper aquifer (Figure 3). Five of these monitoring wells (B2, B3, B4, B5, and B6) were installed as temporary monitoring wells to aid in groundwater flow and quality interpretation. The remaining 8 monitoring wells (MW-10 through MW-17) were installed as permanent wells in the upper aquifer. Monitoring well MW-14 brackets the contact between the upper sand and the underlying peat, whereas, the other monitoring wells bracket the water table. The temporary monitoring wells were installed such that the base of the screen rested on top of the peat.

2.4.2 Visual Soil Quality

During installation of the monitoring wells, a log of visibly stained sediments was maintained. No visible staining was observed in boreholes B2, B3, B5, B6, or MW-10. Visible wood preserving constituent staining was observed in the soil from boreholes B4, MW-11, MW-12, MW-13, and MW-14. Borehole B4 has visible wood preserving constituent staining near the surface of the borehole and again near the bottom of the borehole. Boreholes MW-11 and MW-12 were observed to have visible wood preserving constituent staining from approximately 3 feet below land surface to the upper sand and peat contact. Visible wood preserving constituent staining was present only near the surface of borehole MW-13. Visible wood preserving constituent staining was encountered near the surface at MW-14 and continued to be observed below the upper sand and peat contact to a depth approximately 14 feet below land surface.

Diesel stained sediments were observed at MW-15, MW-16, and MW-17 located in the southwestern portion of the site in the vicinity of previous aboveground diesel storage tanks. Soils from boreholes MW-15, MW-16 and MW-17 were diesel stained near the surface of the borehole to a depth of approximately 5 feet below land surface.

2.4.3 Site Geology

Soil borings completed during the Phase I monitoring well installation activities indicate that the site is underlain by a brown, fine to medium sand from the land surface to approximately 10 to 15 feet below land surface. A dark brown to black peat with varying amounts of wood and root fragments is present beneath the sand. Based on a single boring (MW-14), the peat unit appears to be approximately 10 to 11.5 feet thick. Underlying the peat is a brown, medium to coarse sand. The thickness of the underlying sand and the depth to the next confining unit was not evaluated during the Phase I groundwater quality assessment.

2.4.4 Site Hydrogeology

In order to characterize groundwater flow changes due to tidal influences at the site, a 12-hour groundwater elevation evaluation was conducted on April 1, 1992 utilizing all existing monitoring wells and 2 staff gauges, one located in the Cape Fear River and one in the on-site drainage ditch. Water level measurements were taken every 2 hours from each monitoring well and the staff gauges. Please refer to Attachment A for a tabulated historical groundwater elevation summary table.

The groundwater flow evaluation indicated that the tidal cycle does affect the groundwater elevations in the monitoring wells located at the site. At times when the tidal stage exceeds mean sea level (the time interval when the tide is approaching and receding high tide) during the tidal cycle, groundwater "stagnation lines" occur along the bank of the Cape Fear River and along the on-site drainage ditch. This zone of stagnation is the result of the surface water in the Cape Fear River and the on-site drainage ditch moving into the aquifer material (recharge) and becoming opposed by groundwater discharging from the aquifer towards the Cape Fear River and the drainage ditch. When the tidal stage is below mean sea level during the tidal cycle, the groundwater flows in a radial pattern from the center of the site and discharges into the Cape Fear River and the surrounding drainage features the circumscribe the site. The tidal cycle appears to only slightly influence water levels in the center of the site. A delayed effect was observed, in that, the highest groundwater elevation in the center portion of the site occurred at a time after high tide within the Cape Fear River.

2.4.5 Groundwater Quality

The quality of the groundwater was evaluated by collecting groundwater samples from all of the existing monitoring wells at the facility that did not contain separate phase fluids. The monitoring wells were sampled on March 13, 1992 and were analyzed for site-specific metals, semi-volatiles, and volatiles. Please refer to Attachment A for tabulated historical groundwater sample analytical results.

Concentrations of wood-preserving metals were detected in all groundwater samples before filtration. However, after filtration all metal concentrations were below detection limits, except for temporary well B5. Groundwater from this well yielded a concentration of 0.006 mg/l for dissolved copper.

The analytical results indicated that wood-preserving constituents were present in the upper sand beneath the facility. The wood preserving constituent plume was partially defined in the northern, eastern, and western portions of the site. However, the southern edge of the plume was not defined. The total organic wood-preserving constituent concentrations were highest in temporary monitoring well B4 with a value of 28.222 mg/l. Monitoring wells MW-13 and MW-

14 yielded the next highest concentrations with values of 6.335 mg/l and 6.268 mg/l, respectively. Lower concentrations of organic wood-preserving constituents were detected in monitoring wells MW-15, MW-16, MW-17, and temporary well B6. Trace amounts of heavy separate phase fluids were detected in monitoring wells MW-11 and MW-12.

Further information on the Phase I groundwater quality assessment is presented in the ETE, Inc. report entitled: SOUTHERN WOOD PIEDMONT GROUNDWATER QUALITY ASSESSMENT - WILMINGTON NORTH CAROLINA FACILITY dated August 3, 1992.

2.5 Phase II Groundwater Quality Assessment

Data collected during the Phase I groundwater quality assessment was utilized by ETE, Inc. in the preparation of recommendations for a Phase II groundwater quality assessment. The purpose of the Phase II groundwater quality assessment was to further define the hydrogeology and groundwater quality with respect to past wood preserving activities at the facility. Phase II groundwater quality assessment activities included the abandonment of five temporary monitoring wells, installation of 12 monitoring wells, groundwater flow evaluation, groundwater sampling, soil sampling, slug testing, and the preparation of an aerial photograph and topographic map depicting the site. For a complete description of the Phase II groundwater quality assessment proposed activities, please refer to the letter report submitted to SWP entitled: RECOMMENDATIONS FOR A PHASE II GROUNDWATER QUALITY ASSESSMENT - SOUTHERN WOOD PIEDMONT COMPANY-WILMINGTON, NORTH CAROLINA dated August 10, 1992.

2.5.1 Temporary Monitoring Well Abandonment

The five Phase I temporary monitoring wells B2, B3, B4, B5, and B6 were abandoned by over-reaming and pressure grouting the borehole to land surface.

2.5.2 Monitoring Well Installation

Based on the data collected during the Phase I groundwater quality assessment, it was determined that additional monitoring wells were necessary to properly define the horizontal and vertical extent of dissolved and separate phase fluid plumes present beneath the facility. Twelve additional monitoring wells were installed between September 28 and October 8, 1992 as part of Phase II groundwater quality assessment activities.

Nine monitoring wells (MW-18 through MW-26) were completed in the upper aquifer and three monitoring wells (MW-8A, MW-11A, and MW-19A) were completed in the lower aquifer at the site during the Phase II investigation.

2.5.3 Site Geology

The site is underlain by a brown, fine to medium sand (upper sand) to a depth of 7 to 16 feet below land surface. Present beneath the upper sand is a 13 to 15 feet thick, dark brown to black clayey peat to peaty clay (peat) with varying amounts of wood and root fragments. Underlying the peat is a 14 to 18 feet thick, light brown, medium to coarse sand (lower sand). Underlying the lower sand is a 2.5 to 4 feet thick, firm, tight, olive gray silty clay with 5 to 10 percent phosphate and glauconite grains (lower clay). Beneath the lower clay is a very dense, light gray sandy shell mold limestone and sand with alternating cemented shell molds and friable silt to large pebble sand laminae. The thickness of this limestone unit is currently unknown but, based on geologic literature, is estimated to be on the order of 650 to 700 feet in thickness.

2.5.4 Site Hydrogeology

Three aquifers and two confining units have been encountered beneath the facility. The upper sand (upper aquifer) is under water table conditions and, as such, is an unconfined or water table aquifer. The upper aquifer at the site is bounded on all sides by groundwater discharge boundaries (e.g. Cape Fear River, on-site drainage ditches, and Greenfield Creek). Groundwater within the upper aquifer migrates from the center of the facility and discharges to these boundaries. The peat, located beneath the upper aquifer, is a leaky confining unit that separates the upper and lower aquifers at the facility. Visual observation of the peat indicates that it is water saturated throughout its entire thickness. The lower sand (lower aquifer) at the facility is bounded above by the leaky peat and below by the lower silty clay and is therefore, a semi-confined aquifer. The groundwater flow direction within the lower aquifer appears to be controlled by the Cape Fear River. Beneath the lower aquifer at the facility is a silty clay. This silty clay is a confining layer at the facility. The third and lowermost aquifer encountered beneath the SWP facility is the Peedee Limestone Formation. The unit is a confined aquifer and is a major source of groundwater in this area.

Groundwater elevations from all of the monitoring wells and surface water elevations from the staff gauges were collected at low tide at the facility on October 15, 1992 (Attachment A). A water table mound was observed beneath the center of the site in the upper aquifer. From this mound groundwater flows to the east and north towards the on-site drainage ditches, to the south towards Greenfield Creek, and to the west towards the Cape Fear River. The average horizontal hydraulic gradient for the upper aquifer was 0.0015 ft/ft. The potentiometric surface for the lower aquifer beneath the facility was evaluated utilizing the three lower aquifer monitoring wells. The groundwater flow direction in the lower aquifer was to the northwest with a horizontal hydraulic gradient of 0.0002 ft/ft.

The vertical hydraulic gradients between the upper and lower aquifers were evaluated by comparing the groundwater elevations in the three well clusters at the facility. An upward

vertical hydraulic gradient of 0.02 ft/ft exists at the MW-8 well cluster and downward vertical hydraulic gradients of 0.012 ft/ft and 0.003 ft/ft exist at MW-11 and MW-19 well clusters, respectively. Please refer to Attachment A for a tabulated historical vertical hydraulic gradient summary.

Slug tests to evaluate the hydraulic conductivity of the upper aquifer, peat, and lower aquifer were completed at 15 monitoring well locations. The average horizontal hydraulic conductivity measured in the upper aquifer is 5.06×10^{-4} cm/sec, in the peat is 3.2×10^{-5} cm/sec, and in the lower aquifer is 4.05×10^{-3} cm/sec.

The horizontal hydraulic gradient and horizontal hydraulic conductivity were utilized to evaluate the groundwater seepage velocity for the upper aquifer, peat and lower aquifer at the facility. The average seepage velocity for the upper aquifer is 0.8 m/year, for the peat is 0.02 m/year, and for the lower aquifer is 0.85 m/year.

2.5.5 Soil Quality

During installation of the monitoring wells, close attention was given to the condition of the soils encountered. Soil observations included visible staining of the soil, odor, total organic vapor screening (OVA), and laboratory soil sampling. Soil observations during the Phase I and II groundwater quality assessments indicate that three main source areas exist (Figure 4). One source is the wood treatment area, which includes the former creosote treatment area, former CCA treatment area and the former sludge ditch. The second source is the former large storage tank containment area and the third source is the former diesel storage tank areas.

Visible staining of the soils in the vicinity of the wood treatment area was observed from 3 feet below land surface to the top of the peat (13 feet below land surface) at MW-11 and to 8 feet below the top of the peat in MW-14 (16 feet below land surface). At MW-26, visible staining first occurs at a depth of 10 feet below land surface and is present to a depth of 1 foot below the top of the peat (17 feet below land surface).

In the vicinity of the large storage tank source area visibly stained soils are present near MW-13 from 3 feet below land surface to a depth of 8 feet below land surface. Visibly stained soils are present in monitoring well MW-22 from 3 feet below land surface to a depth of 9 feet below land surface.

The diesel tank source areas are indicated by monitoring wells MW-15, MW-16, and MW-17. At MW-16 and MW-17, diesel stained soils were observed from the surface to a depth of 5 feet below land surface with a diesel odor occurring to the top of the peat. In the vicinity of MW-15, diesel stained soils were observed to a depth of 5 feet below land surface. Diesel odors were also observed near the surface in monitoring well MW-22.

On December 9 and 14, 1992, ETE collected 11 soil samples along the on-site drainage ditch and along the north bank of Greenfield Creek (Figure 3). Each boring was advanced to an approximate depth of 2 feet below land surface. The sample retrieved from each borehole was analyzed for the Wilmington site-specific metals, semi-volatiles and volatiles. Please refer to Attachment A for a tabulated historical soil sample summary table.

The highest levels of arsenic detected were present in off-site samples SS-1 at 3.5 mg/kg, SS-2 at 5.2 mg/kg, and on-site samples SS-4 at 3.6 mg/kg, SS-5 at 1.5 mg/kg, and SS-7 at 2.3 mg/kg. The highest detected levels of chromium occurred in off-site samples SS-1 at 5.5 mg/kg, SS-2 at 14 mg/kg and in on-site samples SS-4 at 11 mg/kg and SS-7 at 9.2 mg/kg. The highest detected copper and lead concentrations, respectively, occurred in off-site samples SS-1 at 6.1 and 14 mg/kg, SS-2 at 46 and 290 mg/kg, SS-3 at 8 and 61 mg/kg, and in on-site samples SS-4 at 14 and 25 mg/kg. The two highest lead concentrations, 290 and 61 mg/kg occurred in off-site samples.

The CCA and diesel source areas at the site are located roughly 400 to 600 feet northwest of soil samples SS-5 and SS-6. In all cases, the lowest metal concentrations on-site occurred in soil samples SS-5 and SS-6, which are the closest soil sample locations to the source area. Therefore, the laboratory detected values most probably represent naturally occurring background levels or another off-site source. The on-site soil sampling by Geraghty & Miller in 1991 also suggested that the on-site metal concentration results most probably represented background levels for metals.

The soil samples were also analyzed for semi-volatile and volatile organic wood-preserving constituents. The lowest organic wood preserving constituent concentrations occurred at locations SS-2, SS-3, SS-8 and SS-11 with concentrations of 3.25 mg/kg, ND, 1.0 mg/kg, and ND, respectively. Moderate values occurred in soil samples SS-1 at 9.936 mg/kg and SS-4 at 17.691 mg/kg. High concentrations occurred in SS-5 at 167.0724 mg/kg, SS-6 at 150.4248, SS-7 at 203.259 mg/kg, and SS-9 at 357.3546 mg/kg. The highest concentration of organic wood-preserving constituents occurred in SS-10 with a concentration of 6,110.008 mg/kg. As demonstrated by the detected constituents, wood-preserving activities may have contributed to the observed organics in the soil. The on-site source of wood-preserving constituents is located roughly 400 feet northwest of soil sample location SS-5 and SS-6. High concentrations of detected organics occurred at these locations. Further from the source, at SS-1, SS-2, SS-3, SS-4, and SS-8, the concentrations of organic wood-preserving constituents have decreased considerably. The soil samples along Greenfield Creek (SS-1, SS-9, and SS-10) have detectable organic concentration levels, both upstream and downstream from the on-site drainage ditch. The detection along Greenfield Creek may suggest that additional off-site sources of these compounds are present.

2.5.6 Groundwater Quality

Between October 13 and 16, 1992, ETE collected 21 groundwater samples from the existing monitoring wells at the facility. The groundwater samples were analyzed by the laboratory for dissolved and total arsenic, chromium, copper, and lead and semi-volatile and volatile organics. Please refer to Attachment A for a tabulated historical groundwater sample parameter summary.

All dissolved metal concentrations were listed below detection limits, except for monitoring wells MW-15, MW-17, and MW-22. Groundwater from these wells yielded a dissolved arsenic concentration of 0.023 mg/l, 0.0057 mg/l, and 0.013 mg/l, respectively.

The areas of separate phase fluids and areas of greatest organic wood preserving constituent concentrations occurred in close relation to the source areas (large storage tank area, diesel storage tank area, and the wood treatment area). The greatest concentration of organic wood-preserving constituents occurred at MW-13, MW-14 and MW-22, with concentrations of total PAH's of 8.130 mg/l, 8.973 mg/l, and 13.358 mg/l, respectively. Heavy separate phase fluids were present in MW-11, MW-12, and MW-26. For additional information on the Phase II assessment activities please refer to the report by ViroGroup, Inc. entitled: PHASE II GROUNDWATER QUALITY ASSESSMENT WILMINGTON, NORTH CAROLINA FACILITY, dated February 26, 1993.

2.6 Cape Fear River Surface Water Sampling

Surface water samples have been collected from the Cape Fear River adjacent to the former wood treating facility since December 1985. Two upgradient and two downgradient samples are collected along the east bank of the Cape Fear River during each sampling event (Figure 22). The upgradient surface water samples are located near the U.S. Highway #74 bridge and near an old slip at the former wood treating facility. The downgradient surface water samples are located near the mouth of Greenfield Creek and near the North Carolina State Ports Authority. A total of 14 routine sampling events have occurred through July 1993. One resampling event, to evaluate a detection during the routine June 1989 sampling event occurred in July 1989.

The upgradient sample location near U.S. Highway #74 has been below laboratory detection limits for the Wilmington site-specific constituents since initiation of surface water sampling activities. Surface water samples collected near the old slip have also been below laboratory detections limits for the Wilmington site-specific constituents, except on two occasions. Copper was detected at 0.02 mg/l in June 1988 and chromium was detected at 0.011 mg/l in January 1990 near the old slip.

Wilmington site-specific constituents were detected on two occasions at the downgradient location near the mouth of Greenfield Creek. Naphthalene was detected at a concentration of

0.050 mg/l during the June 1989 sampling event. To evaluate the detection of naphthalene, a second sample was immediately collected near the mouth of Greenfield Creek in July 1989. The July 1989 surface water sample near the mouth of Greenfield Creek was below laboratory detection limits for the Wilmington site-specific constituents. During the July 1990 sampling event chromium was detected at 0.046 mg/l and copper was detected at 0.052 mg/l near the mouth of Greenfield Creek. The downgradient sample location near the North Carolina State Ports Authority has been below laboratory detection limits for the Wilmington site-specific constituents since initiation of sampling in December 1985. Please refer to Attachment A for the historical surface water sample parameter summary table for the Cape Fear River.

Multiple sources of potential contamination to the Cape Fear River exist in this vicinity because of heavy industrialization along its banks and along the banks of tributary creeks. Urbanization along Greenfield Creek, including a City water treatment facility and a fuel tank farm present potential sources of contamination that may discharge to the Cape Fear River. The distribution of various constituents detected in soil samples collected along Greenfield Creek suggested the likelihood that multiple sources exist.

3.0 PHASE III GROUNDWATER QUALITY ASSESSMENT

Data collected during the Phase I and Phase II groundwater quality assessments was utilized in the preparation of recommendations for a Phase III groundwater quality assessment. The purpose of the Phase III groundwater quality assessment was to further define the hydrogeology and groundwater quality with respect to past wood preserving activities at the facility. Phase III activities included the abandonment of one monitoring well, installation of six upper aquifer monitoring wells and seven lower aquifer monitoring wells, groundwater sampling, soil sampling, and collection of sequential groundwater elevations from each monitoring well at the site to evaluate the tidal effects on the upper and lower aquifer flow regimes. For a complete description of the proposed Phase III groundwater quality assessment activities, please refer to the letter submitted to SWP entitled: RECOMMENDATIONS FOR A PHASE III GROUNDWATER QUALITY ASSESSMENT - SOUTHERN WOOD PIEDMONT COMPANY WILMINGTON, NORTH CAROLINA dated February 11, 1993. Presented below is ViroGroup, Inc. - ETE Division's summary of findings for the Phase III groundwater quality assessment.

3.1 Monitoring Well Abandonment

During the Phase II groundwater quality assessment, monitoring well MW-24 was installed adjacent to an on-site road that is used by the public for access to the Cape Fear River. This well was vandalized on several occasions. In order to prevent additional vandalism, this well was abandoned and reinstalled approximately 60 feet west in a less visible, wooded area. The designation for the replacement monitoring well is MW-24R. Monitoring well MW-24 was abandoned by over-reaming to below the well depth and removing all well materials from the

borehole. The resultant borehole was then abandoned by pressure grouting with a cement/bentonite (6% bentonite) grout to land surface using the tremie pipe method. Please refer to Attachment B for the MW-24 well abandonment record.

3.2 Monitoring Well Installation

Phase I and II activities included the installation of 17 upper aquifer and 3 lower aquifer monitoring wells at the facility. Based on this data, additional monitoring wells were necessary to properly define the plumes present within the upper and lower aquifers beneath the site. Twelve additional monitoring wells were installed between October 26 and November 13, 1993 as part of the Phase III groundwater quality assessment activities. Please refer to Figure 3 for the locations of the newly installed monitoring wells.

In order to install the proposed monitoring wells, appropriate permits were required. ViroGroup, Inc. contacted the State of North Carolina Department of Health, Environment, and Natural Resources (NCDHENR) officials to notify them of our intent to install monitoring wells in North Carolina. Diane Rossi of the Wilmington Division of NCDHENR stated that current regulations stipulate that well permits are not required if the monitoring wells are located on-site and are not to be used for production or recovery.

Monitoring wells MW-28 and MW-28A were installed on a parcel of land adjacent to the Atlantic Coast Line Railroad located along the eastern property boundary. Access to this parcel could only be accomplished by driving along the railroad track easement. A right-of-entry permit was acquired through H.C. Worsham, Public Project Engineer of CSX Transportation, allowing the transport of the drilling rig and equipment along the railroad easement for monitoring well installation. Please refer to Attachment C for a copy of the letter requesting the Right-of-Entry permit and a copy of the permit issued by CSX Transportation allowing access to the parcel of land.

One upper aquifer monitoring well (MW-27) was installed in a wetland area. Due to the location of the well, it was necessary to notify the U.S. Army Corps of Engineers of the intent to install the well. Please refer to Attachment C for a copy of the letter notifying the Corps of Engineers and a copy of the letter from the Corps of Engineers approving the installation of the monitoring well.

Arrangements were made with the City of Wilmington to provide potable water for well installation through an on-site water hydrant.

In order to better define the horizontal extent of the plumes in the upper aquifer, ViroGroup, Inc. installed 5 additional monitoring wells during the Phase III assessment. One upper aquifer monitoring well (MW-27) is located in the northern portion of the site, adjacent to the Amerada

Hess facility monitoring well. Three of the monitoring wells, designated MW-28 through MW-30, were installed along the eastern property boundary and the southern perimeter of the wetland area. The fifth monitoring well (MW-24R) was installed as a replacement well for abandoned well MW-24.

ViroGroup, Inc. also completed 7 monitoring wells (MW-11B, MW-14A, MW-20A, MW-22A, MW-24A, MW-28A and MW-29A) in the lower aquifer at the site. These lower aquifer monitoring wells were used to evaluate the thickness of the peat, the nature of the aquifer materials underlying the peat, the presence of a lower confining layer, the groundwater quality within the lower aquifer, and the lower aquifer groundwater flow direction(s) and hydraulic gradients.

The monitoring wells were installed using an all-terrain vehicle (ATV) mounted drilling rig. Using the ATV rig allowed the installation of the monitoring wells without the build up of extensive roadways. To ensure representative soil sample collection, the monitoring wells were installed using the mud-rotary drilling technique. All of the monitoring wells were installed according to SWP specifications (Figure 5) with the exception of not using a surface casing during construction of the upper aquifer monitoring wells. A surface casing was not set during completion of the upper aquifer monitoring wells due to the upper aquifer being less than ten feet thick and the water table being located approximately 1 foot below land surface.

The upper aquifer monitoring wells were installed by advancing the borehole to the top of the peat. Borehole depths ranged from 7 to 14 feet below land surface. The borehole for the lower aquifer monitoring wells was advanced to the top of the lower clay. Borehole depths for the lower aquifer monitoring wells ranged from 40 to 46 feet below land surface.

During advancement of the soil borings, split-spoon samples were collected. A representative sample from each split spoon was placed in a zip-lock bag with adequate head space and screened with a photoionization detector (PID) organic vapor analyzer. All observations were recorded and the soil classified using the Unified Soil Classification System.

Except for monitoring well MW-27, all upper aquifer monitoring wells were installed so the base of the screen rests on top of the peat. The screen of monitoring well MW-27 was installed to bracket the water table.

To install the lower aquifer monitoring wells, a 10-inch diameter borehole was advanced into the underlying peat unit to a depth of approximately 20 feet below land surface. A 6-inch diameter PVC surface casing was installed into the open borehole. A grout mixture of cement and bentonite was placed by the tremie method in the annular space around the surface casing and the grout allowed to set a minimum of 24 hours. Within the surface casing, a 3.875-inch

diameter borehole was drilled to the top of the lower confining clay. Split-spoons were collected continuously to a depth of 20 feet, thereafter, they were collected on five-foot centers.

All monitoring wells were constructed using 2-inch diameter, 10-foot sections of flush joint, threaded, PVC riser with a 5-foot section of factory slotted (0.01 inch) stainless steel well screen. A 10-foot screen was used in the completion of monitoring well MW-27 to allow for bracketing the water table which fluctuates due to tidal influences. Well construction included the placement of a sand filter from the base of the well screen to a height of two feet above the top of the screen. A two-foot bentonite plug was placed on top of the sand pack and a bentonite grout was placed in the remaining annular space to land surface.

To prevent cross-contamination during drilling operations, all construction materials and downhole drill equipment were steam cleaned between each borehole. All decontamination fluids were contained in a lined pit on-site.

To maintain the integrity of the wells after installation, each well was secured with a protective pad, aluminum casing, and keyed-alike locks.

Upon completion, all of the newly installed monitoring wells were developed by the swab and pump method.

All soil removed during the advancement of the boreholes, all decontamination fluids, all development fluids, and other drilling derived waste was disposed in labeled roll-off containers and solidified for proper off-site disposal.

The precise location and elevation of the ground surface and top of casing (TOC) of the newly installed monitoring wells were determined by direct field survey.

A well construction summary table and boring logs illustrating the sediments encountered, OVA screening, visual observations, olfactory observations, and monitoring well construction is presented in Attachment D of this report.

3.3 Regional and Site Geologic Conditions

3.3.1 Regional Geology

The SWP Wilmington, North Carolina facility is situated on relatively flat-lying Cretaceous and younger sediments of the Coastal Plain Physiographic Province that extends from the "Fall Line" to the continental margin (Soller and Mills, 1991). Approximately 1,500 feet of Coastal Plain sediments overlie pre-Mesozoic crystalline basement rock in the vicinity of the site (North

Carolina Geological Survey, 1985). Area lithology consists of sands indicative of Post-Miocene surficial deposits overlying sediments of the Upper Cretaceous Peedee Formation (Berry, 1949).

The surficial soils in the site area typically consist of 5 to 60 feet of fine sands. The sands are tan to white in well-drained upland areas, while they are brown to black and contain several feet of organics in low lying or poorly-drained areas. The soils have been eroded and redeposited many times, resulting in buried stream channels, swamps and marsh areas, often containing soft organic silts, clays, and peat (Berry, 1949).

Beneath the surficial soil are sediments of the Peedee Formation that typically range from 650 to 700 feet in thickness. The Peedee soils generally consist of dense to very dense sand with zones of cemented sands and impure limestones. The sands have a characteristic salt and pepper appearance and the Peedee Formation is considered a major aquifer in this area (Blevins and Bradbourne, 1985).

3.3.2 Site Geology

The site is underlain by a very loose to loose, brown, fine to medium sand with a trace of coarse sand and small pebbles to a depth of 7 to 16 feet below land surface. This unit, for the purpose of this report, will be termed the upper sand. Encountered in every boring beneath the upper sand is a 13 to 16 feet thick, very loose, dark brown to black clayey peat to peaty clay with varying amounts of wood and root fragments. The maximum depth below land surface in which the peat was observed was 27.5 feet in monitoring well MW-11A. This unit will be termed the peat. The contact between the upper sand and the underlying peat is sharp. Underlying the peat is a 14 to 18 feet thick, very loose to loose, light brown to brown, medium to coarse sand. This unit has a sharp contact with the overlying peat and was observed to occur to a maximum depth of 44 feet below land surface at monitoring well MW-11A. For this report the lower sandy unit will be termed the lower sand. Encountered in all deep monitoring well borings beneath the lower sand is a 2.5 to 4 feet thick, firm, tight, olive-gray silty clay with 5 to 10% phosphate and glauconite grains. This unit is termed the lower clay. The contact between the lower sand and the top of the lower clay is also sharp. Beneath the lower clay is a very dense, light gray sandy shell mold limestone and sand with alternating cemented shell molds and friable silt to large pebble sand laminae. The thickness of this limestone unit is currently unknown but, based on geologic literature, is estimated to be on the order of 650 to 700 feet in thickness.

Dr. Victor A. Zullo of the University of North Carolina Geology Department located in Wilmington, North Carolina was contacted on November 9, 1992, to discuss the most likely depositional and age history of the units encountered beneath the facility. In order of decreasing age (decreasing depth), the limestone unit encountered may be the top portion of the middle to upper Peedee Formation (65 millon years before present) and has been named the Scotts Hill Member. These sandy limestones are shelf deposits and contain a large fauna that is usually

dominated by pelecypods. In these limestones, the aragonitic shelled mollusc have either been replaced by calcite or, when dissolved, occur as external molds. The locally occurring olive gray clay that caps the limestone at the site is marine in origin and is also most likely part of the upper Peedee Formation (Sohl and Owens, 1991). The Eocene Castle Hayne Limestone is commonly present on top of the Peedee Formation in the North Carolina coastal plain, however in the Wilmington vicinity of the Cape Fear River, the Castle Hayne Formation is missing (Harris and Zullo, 1991). The lower sand at the site is most likely a Pleistocene (10,000 years before present) fluvial deposit occurring as a point bar, cut-off meander or an old oxbow lake sequence. The peat at the site probably occurred as the result of filling an oxbow lake with marsh and swamp type sediments. As a result, the peat at the facility is probably regionally discontinuous in its lateral extent, even though it appears to be continuous beneath the entire facility (Zullo, verbal communication, 1992). The upper sand appears to have been deposited as aeolian sand dunes during the Holocene (Soller and Mills, 1991) or as fill material.

3.4 Site Hydrogeology

3.4.1 Aquifers and Confining Units

Based on the borehole data collected to date, it appears that three aquifers and two confining units have been encountered beneath the facility. The upper sand (upper aquifer) beneath the SWP facility is under water table conditions and should be termed an unconfined or water table aquifer. This aquifer is not likely to be considered a major source of groundwater, except for minor local uses. The upper aquifer at the site appears to be bounded on all sides by groundwater discharge boundaries as shown by the upper aquifer water table flow map to be discussed later in this section. The upper aquifer discharge boundaries include: the Cape Fear River to the west, the drainage ditches located along the north and east property boundaries, and Greenfield Creek along the southern property boundary at the facility. Groundwater in the upper aquifer migrating from the center of the facility discharges to these boundaries rather than migrating beyond their locations.

The peat is located beneath the upper aquifer. This unit consists of silt and clay with varying amounts of wood and root fragments. The nature of the materials making up the peat suggest that this unit should be termed a leaky confining unit that separates the upper and lower aquifers at the facility. Visual observation of the peat indicates that it is water saturated throughout its entire thickness, thereby demonstrating a hydraulic connection between the upper and lower aquifers.

The lower aquifer at the facility consists of a permeable sand material that should, at the facility, be termed a semi-confined aquifer. This lower aquifer is also probably considered a minor source of groundwater in this area, except for local uses. Evidence that the lower aquifer is semi-confined relative to the upper aquifer is elucidated by the facts that the peat is completely

water saturated; the difference in direction of groundwater flow within the lower aquifer relative to the upper aquifer; and by the differences in the elevation head (vertical hydraulic gradient) of the groundwater in the upper and lower aquifers at the facility. The groundwater flow direction and gradients in the lower aquifer appears to be controlled by the surface water elevation of the Cape Fear River. Conversations with the local Corps of Engineers indicated that the Cape Fear River is dredged to the top of the limestone in the vicinity of Wilmington. This dredging of the river allows the lower aquifer to be in complete hydraulic interconnection with the Cape Fear River. The vertical hydraulic gradients, as will be discussed later in this section, indicate that the upper and lower aquifers are to a small degree hydraulically connected.

Beneath the lower aquifer at the facility is an olive gray silty clay of marine origin that acts as a confining unit. This clay is 4 feet thick and on visual observation appears tight and dry.

The third and lowermost aquifer encountered beneath the facility is the Peedee Limestone Formation. The unit is a confined aquifer and is a major source of groundwater in this area.

3.4.2 Groundwater Flow Directions

Groundwater levels were collected from 35 monitoring wells and surface water levels from 3 staff gauges at the facility on November 16 and again on November 19, 1993. Multiple groundwater levels were collected from each monitoring well and staff gauge to evaluate the effect of tidal influences on the groundwater flow direction(s) in the upper and lower aquifers. In addition, the influence of the installation of a tidal flood-control gate at the confluence of Greenfield Creek and the Cape Fear River located at the southwestern edge of the property was evaluated. One set of groundwater levels was collected at low tide; a second set of levels was collected at a time that represents one quarter of a full tidal cycle (one-quarter low tide); a third set of levels was collected at a time that represents three quarters of a full tidal cycle (three-quarter high tide), and; the last set of levels was collected at high tide (Attachment E). The tidal stage and fluctuation in the Cape Fear River, in Greenfield Creek, and in the on-site drainage ditches do not coincide. Therefore, the tidal stage referred to during this evaluation is the tidal stage in the Cape Fear River.

The collected water level measurements were used to develop a series of water table surface maps for the upper aquifer (Figures 6 through 9). The figures progress from low tide conditions to high tide conditions at the site. The data used to construct the water table maps was collected by measuring the depth to water from the top of casing in all monitoring wells screened in the upper aquifer and the staff gauges that exist in the surface water bodies. The elevation of the top of casing was surveyed by a registered land surveyor to within 0.01 feet mean sea level (MSL). The depth to water in each well was subtracted from the top of casing elevation at each respective well to yield the elevation of the water table at that location. The groundwater elevations were plotted on a scaled site map and contoured. Groundwater flow directions are

depicted by arrows showing flow from areas of higher groundwater elevation to areas of lower groundwater elevation.

As illustrated on the low tide upper aquifer water table map (Figure 6), an elongate water table mound exists that is at its highest elevation in the northeast corner of the site. From this location the groundwater mound extends along the central portion of the site to the south with local highs in the center of the site in the vicinity of MW-12 and along the wetland area to the southeast. From this elongate groundwater mound, the groundwater flows off in all directions toward the on-site drainage ditches, Greenfield Creek, and the Cape Fear River. The horizontal hydraulic gradient at low tide is 0.0015 ft/ft along the northern property boundary toward the Cape Fear River; 0.0032 ft/ft in the central portion of the site toward the on-site drainage ditches; 0.0025 ft/ft in the central portion of the site toward the Cape Fear River, and; 0.0017 ft/ft in the southeastern portion of the site toward Greenfield Creek. Local curvatures in the groundwater isoelevation lines result from the groundwater in the upper aquifer discharging to the on-site drainage ditches, Greenfield Creek, and the Cape Fear River. Groundwater within the upper aquifer from off-site in the vicinity of Optimist Park is flowing to the west towards the on-site drainage ditch near monitoring well MW-28 located to the east of the site. Both the Cape Fear River and the on-site drainage ditch staff gauges are at the lowest elevation observed during this flow evaluation. This suggests that the tidal gate is open allowing Greenfield Creek and the on-site drainage ditches to discharge to the Cape Fear River.

To keep reiteration to a minimum, only changes to the upper aquifer water table maps for the remainder of the tidal cycle will be highlighted in the following discussions. At one-quarter low tide the groundwater mound in the central portion of the site and along the eastern flank adjacent to the on-site drainage ditch has decreased in elevation. Groundwater elevations in the upper aquifer immediately adjacent to the Cape Fear River have begun to increase in elevation. The horizontal hydraulic gradients have remained the same, except for a slight decrease to 0.0016 ft/ft in the central portion of the site toward the Cape Fear River. A groundwater deflection line developed along the on-site drainage ditch. This inflection line occurs when the surface water elevation in the on-site drainage ditch is greater than the groundwater elevation in the upper aquifer adjacent to the ditch due to the rising tide. At this tidal stage, the surface water in the ditch is flowing into the upper aquifer and encountering the groundwater flow from the central groundwater mound. These two opposing forces encounter each other and result in an inflection of approximately 90 degree in flow direction and an order of magnitude decrease in gradient near the drainage ditch. As a result, groundwater and constituents in the groundwater can be smeared with the direction of flow along the inflection line. The surface water elevations in the Cape Fear River and in the on-site drainage ditch are approximately the same indicating that the tide control gate is open.

At three-quarter high tide the central groundwater mound and the eastern flank have begun to increase slightly in elevation. A large increase in groundwater elevation of 0.65 feet has occurred adjacent to the Cape Fear River at monitoring well MW-22. The horizontal hydraulic gradients are approximately the same, except for a decrease in gradient to 0.0005 ft/ft from the central portion of the site toward the Cape Fear River. A groundwater inflection line developed in the upper aquifer that reaches from the northern portion of the site along the Cape Fear River to the southeastern corner of the site along the confluence of Greenfield Creek and the on-site drainage ditch. The elevation of the groundwater along the inflection line is approximately 1.88 feet above mean sea level at MW-18 to the north and approximately 0.96 feet above mean sea level at MW-29 to the southeast. This change in elevation (horizontal hydraulic gradient of 0.0003 ft/ft) along the inflection line indicates that a minor groundwater flow component exists to the south along the Cape Fear River and to the east along Greenfield Creek during the formation of the inflection line. The surface water elevation in the on-site drainage ditch is now much lower than the surface water elevation in the Cape Fear River indicating that the tide control gate is now closed preventing flow from the Cape Fear River to Greenfield Creek.

Groundwater flow at high tide in the upper aquifer is similar to three-quarter high tide. The central groundwater mound has increased in elevation very slightly and the groundwater inflection line has migrated further east into the site. The horizontal hydraulic gradients are the same as the three-quarter high tide. The surface water elevation has increased in the on-site drainage ditch either because of increased discharge flow from the upper aquifer due to increased groundwater elevation or less probable, the tide control gate may have just been opened. An important observation is that the groundwater elevations in the central portion of the site are at their highest during low tide in the Cape Fear River. This most likely is the result of the delayed propagation of increased groundwater elevation from high tide along the Cape Fear River migrating to the central portion of the site.

A series of potentiometric surface maps for the lower aquifer have also been constructed (Figures 10 through 13) to evaluate the tidal effects on the lower aquifer flow regime. At low tide a central groundwater mound is also present in the lower aquifer at the site. Groundwater along this mound is divided and flows off in three directions. Lower aquifer groundwater in the western portion of the site flows toward the Cape Fear River; in the eastern portion of the site toward the drainage ditches, and; the southern portion of the site toward Greenfield Creek. At low tide, horizontal groundwater flow in the lower aquifer discharges to the Cape Fear River in the western portion of the site and flows to the east and south under the on-site drainage ditches and Greenfield Creek in the eastern portion of the site. The horizontal hydraulic gradient to the west is 0.0001 ft/ft, to the east is 0.0008 ft/ft, and to the south is 0.0003 ft/ft. Vertical hydraulic gradients between the upper and lower aquifer are downward along the Cape Fear River and in the central portion of the site ranging between 0.013 ft/ft near the Cape Fear River to 0.016 ft/ft near the wetland area in the central portion of the site (Attachment E). Upward vertical hydraulic gradients are present along the eastern portion of Greenfield Creek and along

the on-site drainage ditches. The upward vertical hydraulic gradients ranged from 0.004 ft/ft near the upper reaches of the on-site drainage ditch to 0.036 ft/ft near the confluence of the on-site drainage ditches.

The vertical hydraulic gradients between the upper and lower aquifers were evaluated by comparing the groundwater elevations in the well clusters at the facility (e.g. MW-28 and MW-28A). The vertical hydraulic gradient is calculated by dividing the difference in groundwater elevation in each well in the well cluster by the difference in the mid-point elevation of each well screen in the well cluster. Downward vertical hydraulic gradients exist in areas of flow from the upper aquifer to the lower aquifer and upward vertical hydraulic gradients exist in areas of flow from the lower aquifer to the upper aquifer.

At one-quarter low tide the potentiometric head along the western flank and the central portion of the groundwater mound have increased. The groundwater divide disappeared and flow in the western portion of the site has reversed and is now flowing toward the southeast. A minor component of flow still exists to the west, however, in a narrow band immediately adjacent to the Cape Fear River. The horizontal gradient across the site to the southeast has decreased to 0.0005 ft/ft. The vertical gradient between the upper and lower aquifer along the western flank has also reversed (MW-8/MW-8A) and is now upward at 0.022 ft/ft. The vertical hydraulic gradient has remained downward in the central portion of the site but has decreased to an average gradient of 0.008 ft/ft. Upward vertical hydraulic gradients are still present along the eastern portion of Greenfield Creek and along the on-site drainage ditches. These upward gradients have increased slightly to an average vertical gradient of 0.029 ft/ft.

During three-quarter high tide the potentiometric head along the Cape Fear River has continued to increase. All flow in the lower aquifer is now to the southeast. The minor flow component to the west toward the Cape Fear River has reversed. The horizontal hydraulic gradient across the site to the southeast has increased to 0.0008 ft/ft. The upward vertical hydraulic gradient has increased to 0.035 ft/ft along the Cape Fear River and has decreased to an average of 0.025 ft/ft along the on-site drainage ditches. Downward vertical hydraulic gradients remain approximately the same in the central portion of the site with an average gradient of 0.008 ft/ft.

The groundwater flow at high tide is similar to three-quarter high tide in the lower aquifer, except that the potentiometric head along the western and central portion of the site has increased. As a result, the horizontal hydraulic gradient to the southeast has also increased to 0.0009 ft/ft. The upward vertical hydraulic gradient increased along the Cape Fear River to 0.042 ft/ft and to an average of 0.027 ft/ft along the on-site drainage ditches. Downward vertical gradients are present in the central portion of the site throughout the tidal cycle with the lowest downward vertical gradients occurring at high tide at an average of 0.005 ft/ft.

3.5 Soil Quality

During installation of the monitoring wells, close attention was given to the condition of the soils encountered. The soil observations were made by collecting split-spoon soil samples continuously from land surface to the bottom of the borehole in the upper aquifer monitoring wells. The soils in the lower aquifer monitoring well boreholes were observed by collecting split-spoon soil samples continuously from land surface to the bottom of the peat, followed by five-foot intervals below the peat to the bottom of the borehole. Soil observations included visible staining of the soil, odor, total organic vapor screening (OVA) using a photoionization detector, and laboratory analyses.

Soil observations during the Phase I and II groundwater quality assessments indicate three main source areas exist (Figure 4). The first area is the wood treatment source area, and includes the former creosote treatment area, former CCA treatment area and the former sludge ditch. The contaminants from these areas appear to have coalesced and are following the same migration pathways in the subsurface. The second source is the large storage tank area. Contaminants from this area are separated from the other areas and appear to be following a different migration pathway. The third source is the diesel storage tank areas. This source can be separated by its location on the site and the physical behavior of the contaminants in the subsurface. The diesel contaminants are less dense than water and tend to float when present as a separate phase. In addition, the dissolved phase associated with diesel does not tend to display a large degree of vertical movement into the subsurface. Wood-preserving constituents are more dense than water and are, therefore, more likely to more downward into the subsurface.

For clarity, soil quality observations will be addressed by source area and will include only observations made during the Phase III groundwater quality assessment. For a review of the observations from previous assessments, please refer to the boring logs in Attachment D or the previously referenced Phase II groundwater quality assessment report.

Visible staining of the soils in the vicinity of the wood treatment source area were further evaluated by Phase III monitoring wells MW-11B, MW-14A, MW-20A, MW-24A, MW-28A, MW-29A, and MW-30. Monitoring well MW-11B is located in the area formerly occupied by the creosote treatment facility. Wood-preserving constituents were observed in the soil from 5 feet below land surface to 17 feet below land surface at this location. Staining was observed to a depth of 1 foot below the top of the peat. Monitoring well MW-14A is located hydraulically downgradient from the former wood treating facility at the upper reaches of the former sludge ditch. Staining was observed at a depth of 3 feet to 22 feet below land surface. Staining was present to a depth of 14.5 feet below the top of peat at MW-14A. Monitoring well MW-20A is located upgradient of the former wood treatment facility. No staining or odors were detected in this boring, however, organic vapors were detected by the OVA in a thin zone on top of the

peat. Monitoring well MW-24A, located downgradient to the south of the former wood treatment facility, had stained sediments from 7 to 12 feet below land surface. Located to the east of the former sludge ditch and across the on-site drainage ditch is monitoring well MW-28A. No staining or odors were detected in this boring. Elevated OVA readings, however, were detected in the upper aquifer and in the peat at this location. Monitoring well MW-29A is located near the confluence of the on-site drainage ditch and Greenfield Creek in the southeastern portion of the property. No visible wood-preserving constituents were present at this location, however, a moderate odor and elevated OVA results were detected in the lower aquifer on top of the lower clay at a depth from 34 to 38 feet below land surface. Monitoring well MW-29A appeared clean until a depth of 34 feet below land surface. This suggests that dissolved constituents have migrated from the wood preserving source area through the upper aquifer, peat, and the upper portion of the lower aquifer and are now being detected downgradient of the source on top of the lower clay. Monitoring well MW-30 is also located downgradient of the wood preserving source area adjacent to the on-site wetland area. No staining was observed, however, a moderate odor and elevated OVA results were detected in the upper aquifer immediately on top of the peat.

Monitoring well MW-22A is completed in the vicinity of the former large storage tank containment area adjacent to the Cape Fear River. Visible staining was observed at a depth from 4 to 6 feet below land surface. A slight diesel odor was observed in the upper 4 feet of the borehole followed by a wood preserving constituent odor from 4 to 14 feet below land surface in the upper aquifer. A slight wood preserving constituent odor and elevated OVA results were also detected in the upper portion of the lower aquifer at MW-22A.

The Amerada Hess Corporation petroleum tank farm is located adjacent to the northern property boundary. A truck fueling and wash area is located near the northeast portion of the City of Wilmington property. Amerada Hess corporation investigated and documented a release in this portion of the site. In addition, Hess installed a monitoring well on the City of Wilmington property. In order to further investigate this release area, monitoring well MW-27 was installed during the Phase III assessment activities. Diesel stained soils, odors, and elevated OVA results were detected to a depth of 6 feet below land surface at this location.

Soil sampling completed during the Phase II groundwater quality assessment indicated high constituent levels in the vicinity of SS-10 along Greenfield Creek (Figure 3). This soil sample was suspect because the laboratory results were a magnitude higher than the other samples collected and the field observations were not indicative of high levels of contamination. Therefore, ViroGroup, Inc. collected a second soil sample (SS-10A) at this location to compare to the original soil sampling results.

To collect the soil sample, a pre-cleaned hand auger was used to advance a borehole into the sediment along the on-site side of Greenfield Creek. The hand auger boring was conducted at

low tide so that the boring could be completed in the creekbed. The boring was advanced to a depth of approximately 2 feet below land surface with the deepest sample retrieved from the borehole sent to the laboratory for analysis of Wilmington site-specific constituents (Attachment F). The sample was removed from the hand auger with a clean stainless-steel spoon and placed in respective clean sample containers provided by the laboratory. All soil excavated during completion of the soil boring was containerized in a roll-off container for proper disposal.

The sediment encountered in the borehole was a fine to very coarse, dark brown sand. No visible staining or odor was present in the soil sample. Please refer to the soil sample collection summary sheet located in Attachment F of this report.

Of the Wilmington site-specific list of constituents analyzed, only a fraction of the constituents were detected. The semi-volatile organics that were detected in the soil included: acenaphthene at 3.3 mg/kg dw, benzo(a)anthracene at 7.3 mg/kg dw, benzo(a)pyrene at 2.6 mg/kg dw, benzo(b)fluoranthene at 6 mg/kg dw, benzo(k)fluoranthene at 2.1 mg/kg dw, chrysene at 9 mg/kg dw, and fluoranthene at 15 mg/kg dw, (7 out of 23 constituents were detected). No volatile organics were detected in soil sample SS-10A. Arsenic was detected at a concentration of 13 mg/kg dw, chromium at 38 mg/kg dw and copper at 34 mg/kg dw. Please refer to Attachment F for a summary of the detected constituents in SS-10A.

Results from the second soil sample collected at location SS-10 are much lower than the first sample collected. The summed total for detected semi-volatile organics in the first sample, SS-10 is 6,110 mg/kg dw and for the second sample SS-10A is 45.3 mg/kg dw. As shown, the first sample is suspect. Please refer to Attachment A for a tabulated historical soil sample parameter summary from the Phase II assessment.

At completion of field activities, the roll-offs containing all assessment derived wastes were solidified by mixing the materials with kiln dust. Following solidification, a composite soil sample was collected for analysis by the Toxicity Characteristic Leaching Procedure (TCLP) to evaluate disposal options for the soil. The soil sample was analyzed for arsenic, chromium, lead, mercury, benzene, methyl ethyl ketone, o-cresol, m+p cresol, hexachlorobenzene, pentachlorophenol, pyridine, 2,4,5-trichlorophenol, and 2,4,6-trichlorophenol. All analytical results were below laboratory detection limits. Please refer to Attachment F for a summary table for the TCLP analysis and for the soil sample collection sheet.

3.6 Groundwater Quality

On November 16 through 19, 1993, ViroGroup collected 31 groundwater samples from the existing monitoring wells at the facility. Groundwater samples were not collected from monitoring wells MW-11, MW-14, MW-22, or MW-26 because a heavy (sinker) separate phase fluid was observed in these monitoring wells. Separate phase fluid thickness measurements were

collected from these monitoring wells using an interface probe. A thickness of 0.01 feet at MW-11, 0.41 feet at MW-14, 0.23 feet at MW-22 and 5.24 feet at MW-26 was measured during the Phase III assessment. A trace of heavy separate phase fluid was present in MW-12. A trace light (floating) sheen was observed in monitoring wells MW-12, MW-13, MW-16, MW-17, and MW-28.

Subsequent to the separate phase fluid evaluation, representative groundwater samples were collected from the remaining monitoring wells utilizing a clean disposable bailer to evacuate a minimum of three well volumes of groundwater from the well. The salinity, pH, conductivity, and temperature of the groundwater at each well were recorded and the groundwater sample placed into respective sterile groundwater sample containers for each well. The containers were labeled according to owner, site name, well number, date, time, and type of analysis to be performed. The collected samples were kept cool by placing the samples immediately into a cooler chilled to 4°C with ice. The sealed samples were then shipped with the appropriate chain-of-custody form via Federal Express overnight to Savannah Laboratories and Environmental Services, Inc. for analysis. The groundwater samples were analyzed for the Wilmington site-specific constituent list (Attachment G). Standard groundwater sampling protocol was followed as documented in the report entitled: SAMPLING AND ANALYSIS PLAN FOR GROUNDWATER MONITORING - SOUTHERN WOOD PIEDMONT COMPANY revised October 1991. Please refer to the groundwater sample collection summary sheets located in Attachment G for a listing of water level, well depth, sample appearance, volume purged, temperature, conductivity, pH, salinity, the presence of separate phase fluids and additional observations made during this groundwater sampling event for each monitoring well at the facility.

All purge water was containerized in a labeled roll-off container for proper disposal.

Temperature-compensated salinity measurements were collected in the field at each monitoring well at the facility using a YSI Model 33 SCT meter. Please refer to Attachment G for the salinity measurement summary table and Figure 14 for the upper aquifer salinity isoconcentration map. The EPA recommended limit for chloride concentration is 250 mg/l. At chloride concentration above 250 mg/l water begins to have an objectional taste. As shown on the upper aquifer salinity isoconcentration map, a mound a fresh water (salinity < 250 mg/l) is present in the northern portion of the site. This mound becomes elongate to the south reaching into the wetland area in the southeastern portion of the property. Brackish water is present in the upper aquifer along the Cape Fear River, Greenfield Creek, and the on-site drainage ditches.

Slightly saline groundwater is also present in the lower aquifer at 200 mg/l in MW-22A adjacent to the Cape Fear River and in MW-29A adjacent to Greenfield Creek. Otherwise, the lower aquifer appears to contain freshwater.

The groundwater samples were analyzed by the laboratory for Wilmington site-specific wood preserving metals, semi-volatiles and volatiles. These constituents were selected to evaluate potential groundwater contamination from the former wood treating facility at the site. Please refer to the groundwater sample parameter summary tables presented in Attachment G for a listing of the individual constituents that were detected at each monitoring well at the facility. Presented below is a summary of the detected constituents at the facility.

The groundwater samples for metals were analyzed after filtration (dissolved metals) and with no filtration (total metals). After filtration, all dissolved arsenic, chromium, and copper concentrations were below laboratory detection limits.

Total arsenic, chromium and copper concentrations were detected in many of the monitoring wells in the upper aquifer at the facility. Total arsenic concentrations in the upper aquifer ranged from ND (non-detected) to 0.088 mg/l. The highest level of total arsenic detected was present at MW-15 in close proximity to the CCA treatment area. Concentrations of total chromium ranged from ND to 4.6 mg/l. The highest detected level of chromium occurred along the northern property boundary at MW-18. Total copper concentrations ranged from ND to 0.058 mg/l. The highest area of detected total copper occurred in the vicinity of the large storage tank area at MW-13. No concentrations of total arsenic, chromium or copper were detected in the lower aquifer at the facility.

Groundwater samples were also analyzed for semi-volatile and volatile organic wood-preserving constituents. Please refer to the Wilmington site-specific groundwater sample list located in Attachment G for a complete listing of the semi-volatile and volatile constituents. From the entire list of constituents analyzed, only a small fraction of the constituents were detected. The semi-volatile organics that were detected in the groundwater included: acenaphthene, anthracene, carbazole, fluoranthene, naphthalene, and phenanthrene (6 out of 23 constituents were detected). The volatile organics that were detected in the groundwater during Phase III include: benzene, ethyl benzene, m/p xylene, o-xylene, and toluene (5 out 30 constituents were detected).

For simplification the organic wood preserving constituent concentrations in each well are summed to arrive at a total organic wood preserving constituent concentration. This total concentration is used to produce organic wood preserving constituent isoconcentration maps for the upper and lower aquifers depicted in Figures 15 and 16.

The areas of separate phase fluid and elevated dissolved constituent concentrations occur in close relation to the source areas (large storage tank area, diesel storage tank area, and the wood treatment area). As demonstrated by the concentration of organic constituents in the source areas, relative to the rest of the site, and by the list of detected constituents, wood-preserving activities most likely contributed to the observed organics in the groundwater at the site.

In the upper aquifer at the facility, heavy separate phase fluids are present in monitoring wells MW-11, MW-14, MW-22, and MW-26. The highest detected dissolved concentrations of total organic wood-preserving constituents are present in MW-12 at 5.155 mg/l and MW-13 at 5.289 mg/l. An east to west trending band of dissolved and free-phase organics occurs along the southern City of Wilmington property boundary between the Cape Fear River to the west and the on-site drainage ditch to the east. Along this band, dissolved organics from the former wood treatment area and sludge ditch migrate to the east toward the on-site drainage ditch and then turn to the south toward Greenfield Creek. Once the dissolved organics approached the area where the stagnation line occurs, the dissolved organics are smeared to the north and south parallel to the on-site drainage ditch. The dissolved organics do not appear to migrate off-site to the east due to the westerly direction of groundwater flow toward the on-site drainage ditch in the vicinity of Optimist Park. Segments of the dissolved plume emanating from the former wood treatment area are also migrating to the southwest toward monitoring well MW-19 and MW-24 and to the west toward MW-17. The dissolved organics in the vicinity of the former diesel storage tanks and the large storage tank area are migrating to the west toward the Cape Fear River.

The lateral extent of the upper aquifer dissolved organic wood preserving constituent plume is defined in the northern portion of the site. The southern portion of the site and the areas off-site to the east of the drainage ditch are defined to low concentrations of wood-preserving constituents.

The dissolved organic wood preserving constituent plume has also migrated vertically through the peat and into the lower aquifer at the facility. Wood-preserving constituents entered the lower aquifer in the vicinity of former wood treatment area, former sludge ditch and the former large storage tank area. In the vicinity of the former wood treatment area and the sludge ditch the dissolved constituents in the lower aquifer have migrated to the east toward the on-site drainage ditch, then to the south toward Greenfield Creek and finally turning southwest toward the Cape Fear River. Near the large storage tank source area, the wood preserving constituents in the lower aquifer are migrating to the west toward the Cape Fear River.

The lateral extent of the lower aquifer dissolved wood preserving constituent plume is defined to the north and west in the central portion of the site and to the east in the vicinity of MW-28A. The downgradient southeastern portion of the site has been defined to low concentrations of wood-preserving constituents.

In order to further investigate the documented release from Amerada Hess Corporation located to the north of the site, groundwater samples for hydrocarbons were collected from monitoring wells MW-6, MW-18, and MW-27. The groundwater samples were analyzed for hydrocarbons as gasoline, as kerosene, as heavy oils, as mineral spirits, as varsol, and as fuel oil/diesel. All

hydrocarbon analyses were below laboratory detection limits for these constituents. Please refer to Attachment G for a summary of the hydrocarbon analyses.

The concentration of each organic wood preserving constituent was compared to the Environmental Protection Agency's Drinking Water Regulations and Health Advisories (EPA, 1993). The EPA lists a maximum contaminant level (MCL) for several of the organic wood-preserving constituents. The MCL for constituents analyzed during the Phase III groundwater quality assessment are: 0.001 mg/l pentachlorophenol, 0.0002 mg/l benzo(a)pyrene, 0.005 mg/l 1,1,2-trichloroethane, 0.002 mg/l vinyl chloride, 0.005 mg/l benzene, 0.005 mg/l carbon tetrachloride, 0.005 mg/l 1,2-dichloroethane, 0.005 mg/l dichloromethane, 0.005 mg/l 1,2-dichloropropane, 0.7 mg/l ethyl benzene, 10 mg/l total xylenes, 1 mg/l toluene, 0.1 mg/l trans-1,2-dichloroethylene, and 0.2 mg/l 1,1,1 trichloroethane. Out of all the constituents analyzed at each monitoring well, only benzene exceeded its MCL. The benzene concentration exceeded the MCL at MW-19 at 0.0055 mg/l and at MW-13 at 0.046 mg/l in the vicinity of the former diesel storage tanks and the former large storage tank area (Figure 17). The laboratory detection limits of 0.05 mg/l pentachlorophenol and 0.01 mg/l benzo(a)pyrene used during the Phase III assessment were not low enough to compare the results to the MCLs for these constituents. However, at the quantitation limit used for the Phase III assessment no pentachlorophenol or benzo(a)pyrene was detected at the facility. Groundwater samples were not collected from monitoring wells that contained separate phase constituents.

3.7 Surface Water Quality

Surface water samples were collected along the east bank of the Cape Fear River adjacent to the former wood treating facility on January 18, 1994. Two upgradient and two downgradient samples were collected. The upgradient surface water samples are located near the U.S. Highway #74 bridge and near the old slip at the former wood treating facility (Figure 22). The downgradient surface water samples are located near the mouth of Greenfield Creek and near the North Carolina State Ports Authority. Both the upgradient and downgradient surface water samples were below laboratory detection limits for the Wilmington site-specific constituents. Please refer to Attachment G for the Phase III surface water sample parameter summary table and laboratory data for the Cape Fear River surface water samples.

4.0 SUBSURFACE WOOD PRESERVING CONSTITUENT MIGRATION

Wood-preserving constituents (creosote/coal tar) are considered to be dense non-aqueous phase liquids (DNAPLS). As a whole, wood-preserving constituents are slightly heavier than water, have a high viscosity, and a low dissolved phase mobility (Cherry, 1992). Because wood-preserving constituents are heavier than water, gravity and interfacial tension between the DNAPL and groundwater play an important role in the migration of the DNAPL. The DNAPL will continue to migrate vertically downward in the subsurface until it intercepts a barrier to its

vertical migration. The barrier to migration could be a fine-grained layer or a clay or any material in which the pore spaces are smaller than that of the host material. If the barrier is flat lying, the DNAPL will begin to pool and spread laterally on this barrier until a critical pool height is encountered. The critical pool height is the height of the DNAPL pool required to exceed the entry pressure (capillary pore pressure and interfacial tension) within the pores of the material restricting the movement of the DNAPL. Once this critical pool height is reached, the DNAPL will then begin to flow through the original barrier to flow (Kueper, 1992). Once the entrance pressure is achieved and flow through the barrier has begun, the reduced interfacial tension can allow the entire free product pool to drain leaving only residual DNAPL behind. If the barrier encountered is sloping, the DNAPL will most likely flow by gravity downslope until another barrier to flow is encountered causing the DNAPL to pool. This can continue until the required entry pressure cannot be met or until the separate phase fluid volume is reduced to residual concentrations.

As the DNAPL is migrating through porous media, residual DNAPL is left behind the trailing edge of the moving DNAPL body due to snap-off and by-passing mechanisms. It can be expected that an estimated 20 percent of the DNAPL body will be left behind as residual during free-phase migration (U.S. EPA, 1993). After a certain distance of migration, the free phase will be reduced to just residual concentrations (Kueper, 1992).

At the Wilmington, North Carolina facility it appears that the concepts presented above exist (Figures 18, 19, 20, and 21). Wood-preserving constituents entered the subsurface at the former wood treatment area (MW-11), along the former sludge ditch (MW-14), and at the confluence of the on-site drainage ditches near (MW-26). In the subsurface, the free-phase wood-preserving constituents migrated to the top of the peat. Once the free-phase wood-preserving constituents encountered the peat, the product began to pool near MW-11 adjacent to a mound in the peat at MW-14. As the pool height increased, its width began to migrate to the northwest toward MW-12 and MW-17, to the southwest toward MW-19 and MW-24, and to the east toward MW-26. For a period of time, the fine-grained nature and the sloping surface of the peat prevented the downward infiltration of free-phase wood-preserving constituents into the peat. However, the pool height continued to increase until the critical pool height was reached. At that time, the free-phase wood-preserving constituents migrated into the peat at MW-11 and MW-14. Because the entry pressure into the peat was exceeded, the pool drained into the peat and migrated to the east toward MW-26 and the on-site drainage ditch. Presently, it appears that the migration of free-phase wood-preserving constituents has reached a standstill by pooling beneath the confluence of the on-site drainage ditches near MW-26. Free-phase measurements indicate that residual concentrations are present in the upper aquifer near MW-11 at 0.01 feet, in MW-12 at trace levels and in the peat near MW-14 at 0.41 feet. Residual concentrations in these areas indicate that the free-phase constituents have migrated from this area leaving a trail of residual concentrations behind. The free-phase constituents appear to have become stationary and are pooled near MW-26 at a thickness of 5.24 feet.

Free-phase wood-preserving constituents also entered the subsurface near the former large storage tank area (MW-13). Once in the subsurface, the free-phase constituents migrated to the west toward the Cape Fear River. It appears that these constituents did not pool on top of the peat as indicated by residual concentrations of 0.23 feet at MW-22.

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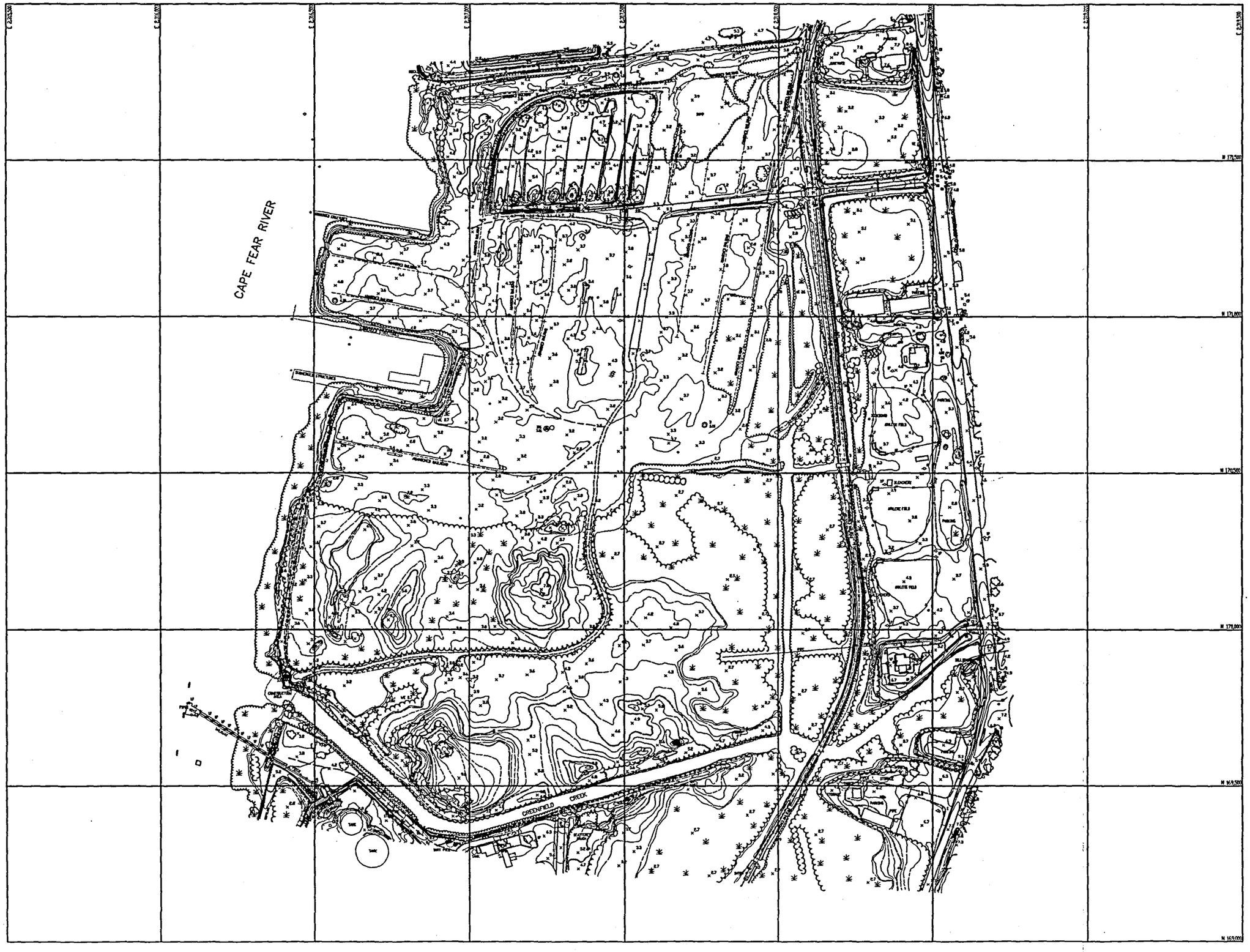
DATE	2/11/94

SITE LOCATION MAP
SOUTHERN WOOD PIEDMONT/ WILMINGTON, N.C. FACILITY

FIGURE NO. 1
CADD NO. G: 5301501
PROJECT NO. 12-53015.00



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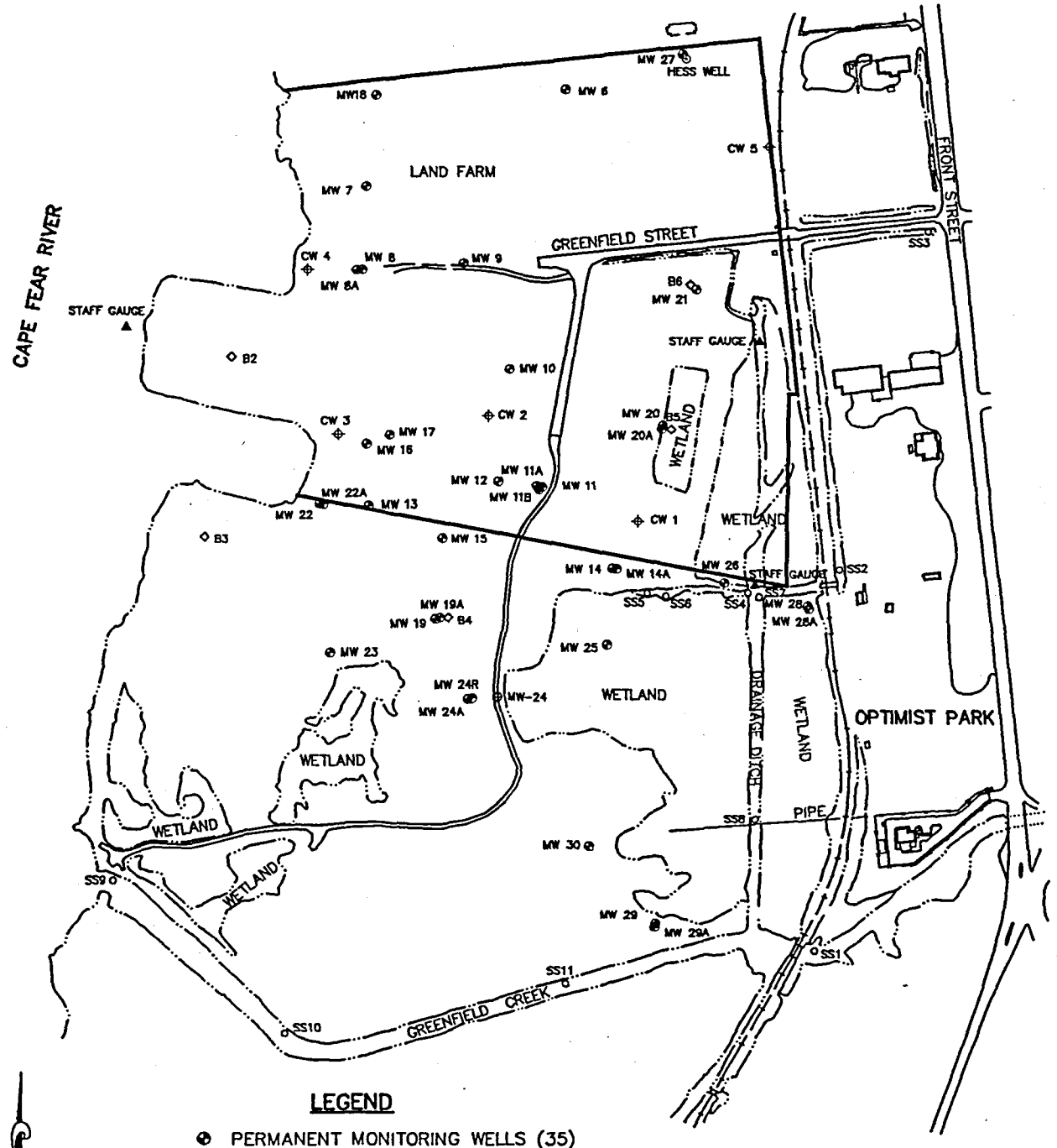
0' 150' 300' 600'
SCALE: 1"=300' CONTOUR INTERVAL: 1/2'
DATE OF PHOTOGRAPHY: 24-FEB-93

FIGURE 2

SITE TOPOGRAPHIC MAP

SOUTHERN WOOD PIEDMONT/
WILMINGTON, N.C. FACILITY



LEGEND

- PERMANENT MONITORING WELLS (35)
- STAFF GAUGE (3)
- SOIL SAMPLES (11)
- ABANDONED TEMPORARY MONITORING WELLS (5)
- CITY WELLS (5)
- HESS WELLS (1)
- ABANDONED MONITORING WELL (1)

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DATE	2/11/94

SITE MAP

SOUTHERN WOOD PIEDMONT/ WILMINGTON, N.C. FACILITY

FIGURE NO.	3
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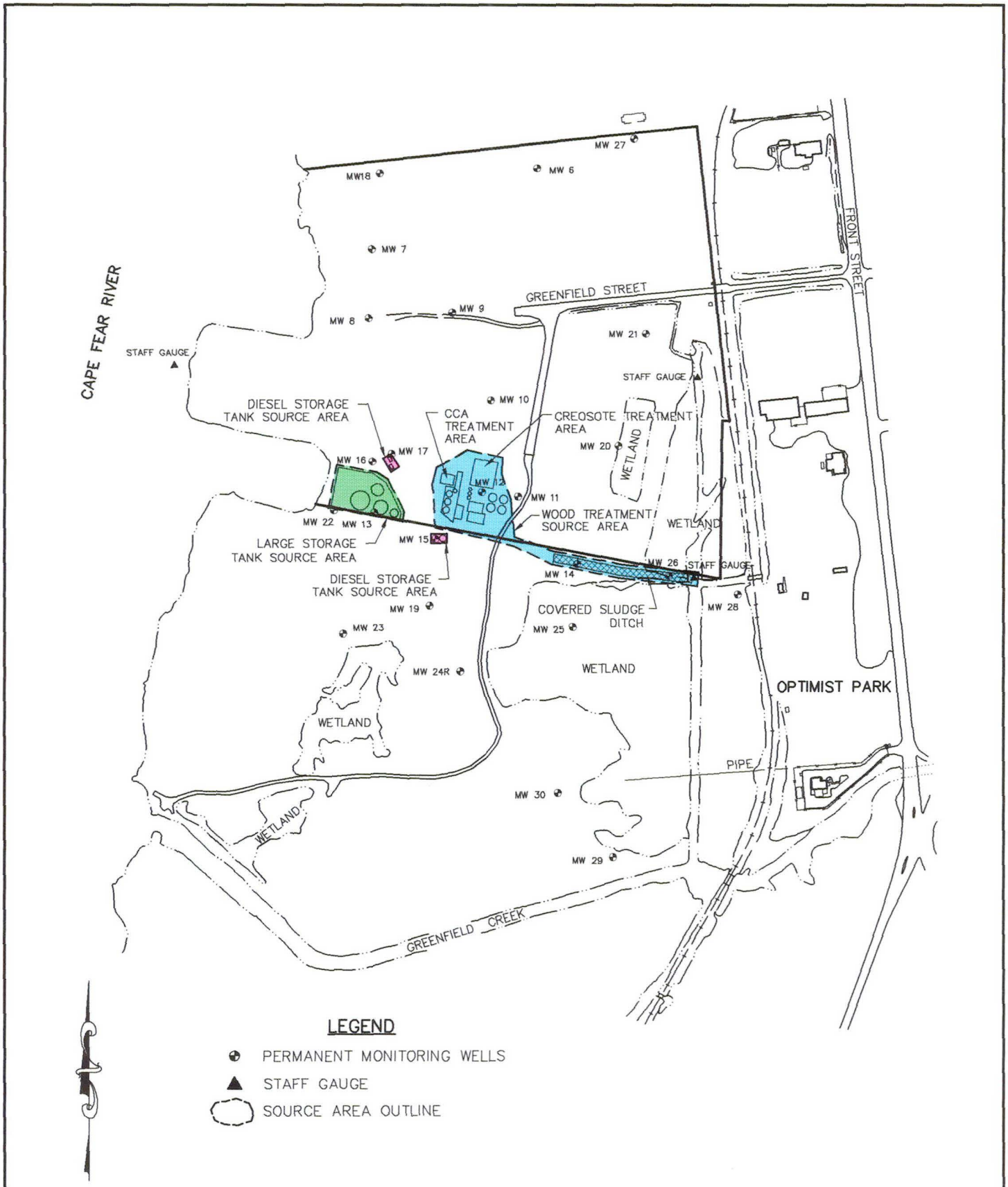
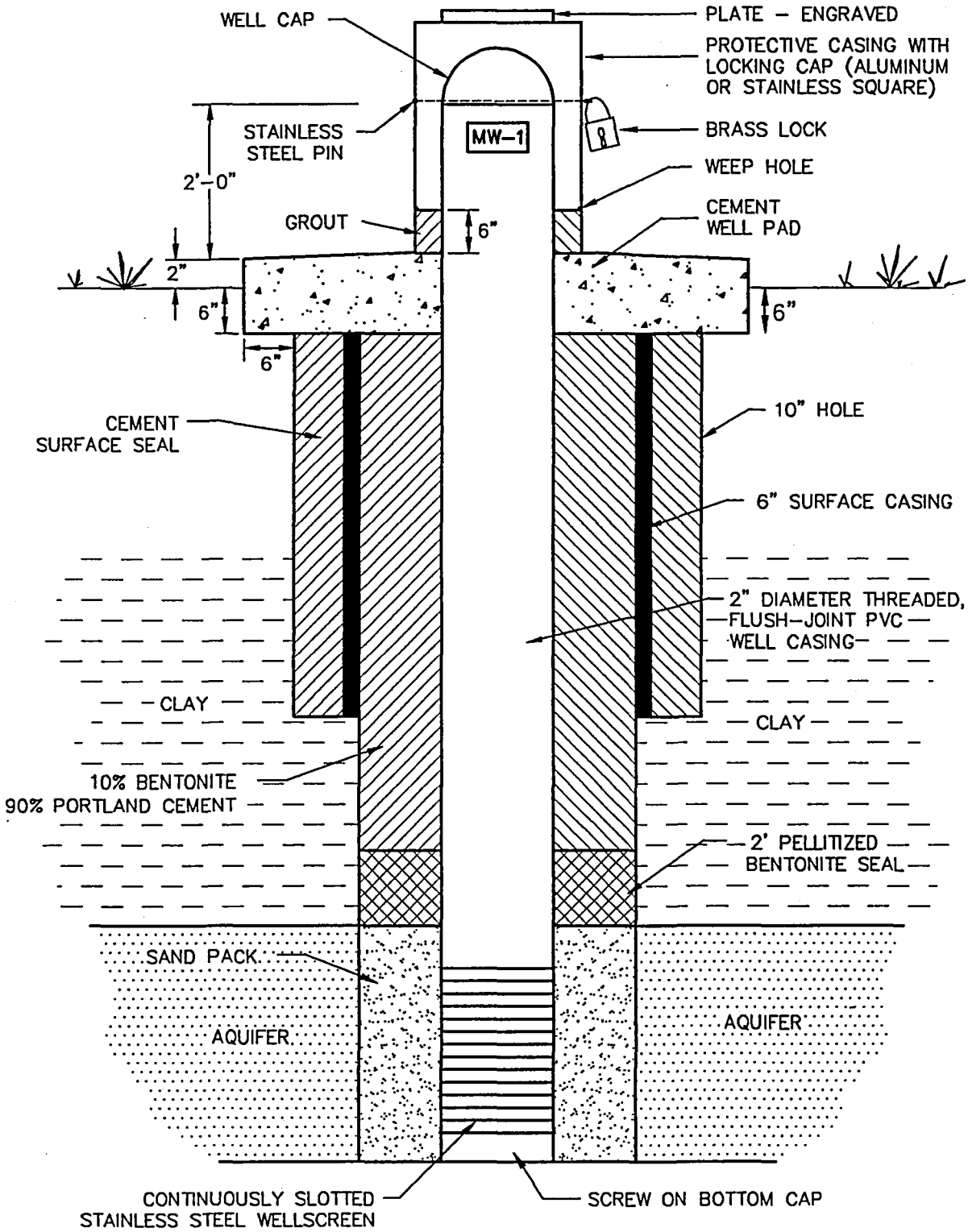
PROJECT NO.	12-53015.00

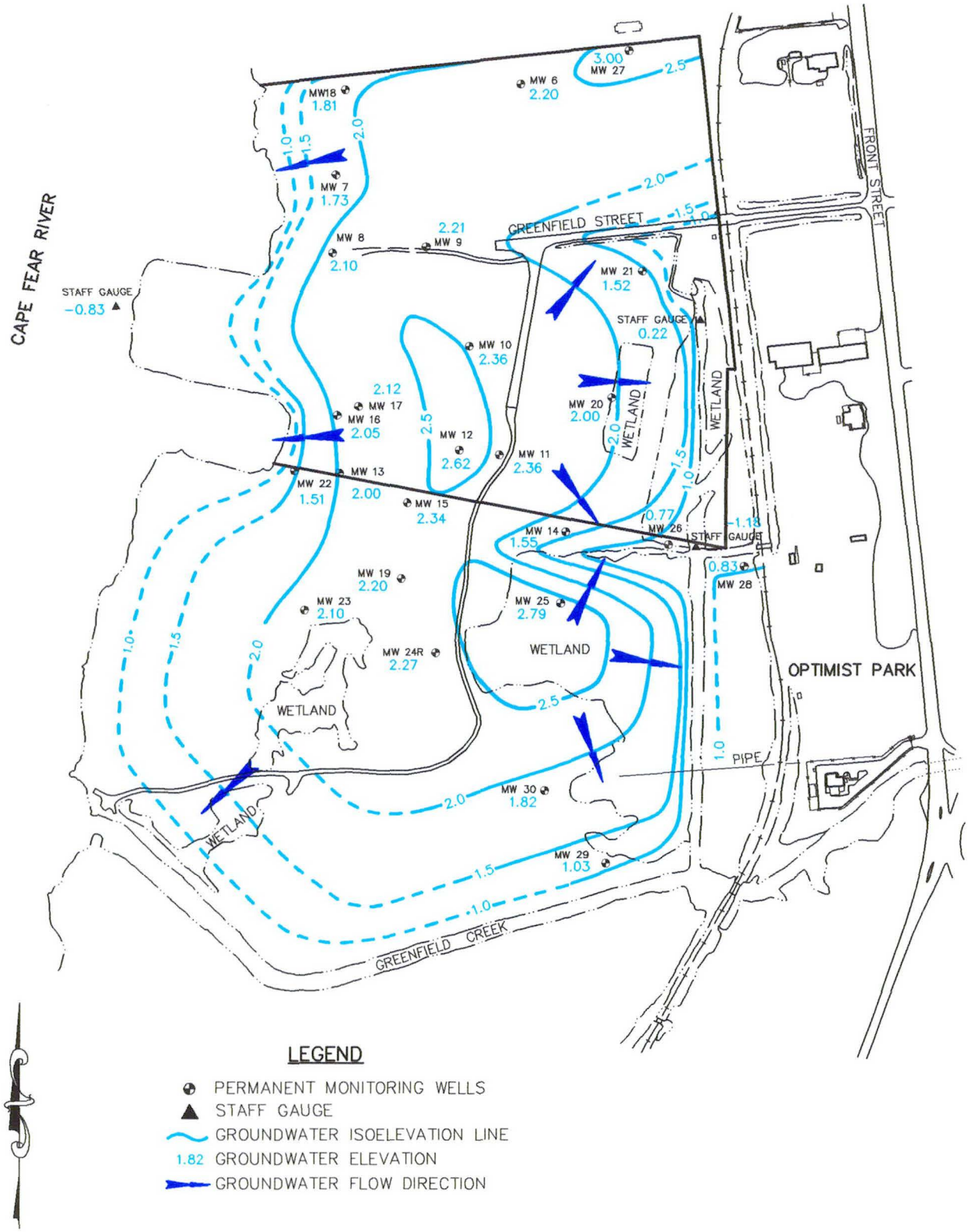


ViroGroup ETE, Division P.O. Box 1867 • 1445 Pisgah Church Rd. • Lexington, S.C. 29072 (803) 957-8270	SCALE 1"=400' DRAWN BY CAB CHECKED BY GBK DATE 2/11/94	SOURCE AREA LOCATION MAP SOUTHERN WOOD PIEDMONT/ WILMINGTON, N.C. FACILITY	FIGURE NO. 4 CADD NO. G:5301501B PROJECT NO. 12-53015.00

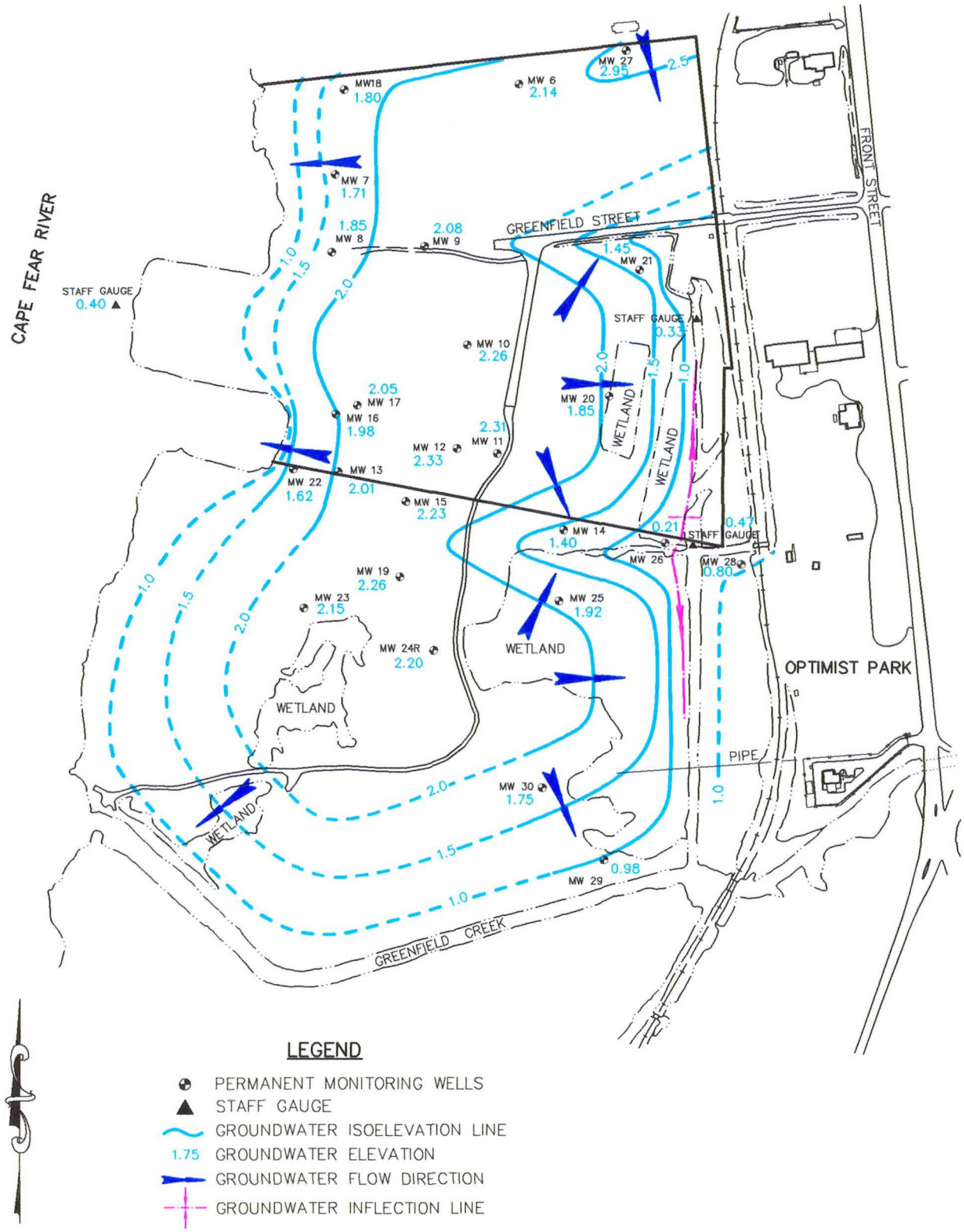


SWP SPECIFICATIONS #7/91
REVISED 3/92

ViroGroup ETE, Division P.O. Box 1667 • 1445 Piedgh Church Rd. • Lexington, S.C. 29072 (803) 957-6270	SCALE N.T.S. DRAWN BY CAB CHECKED BY GBK DATE 4/25/94	GROUNDWATER MONITORING WELL SCHEMATIC SOUTHERN WOOD PIEDMONT/ WILMINGTON, N.C. FACILITY	FIGURE NO. 5 CADD NO. 530MWSCH PROJECT NO. 12–53015.00



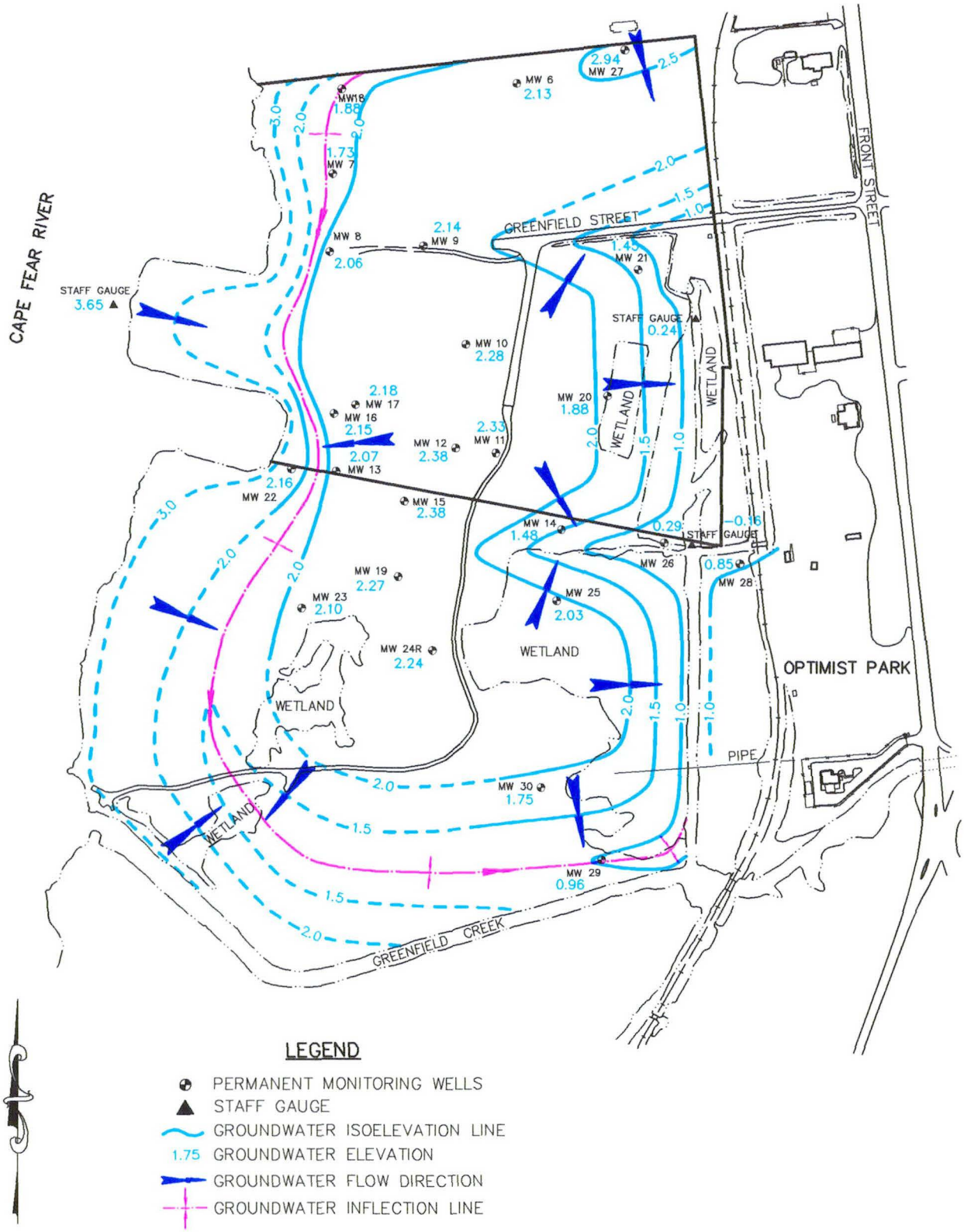
ViroGroup ETE, Division P.O. Box 1867 • 1445 Pisgah Church Rd. • Lexington, S.C. 29072 (803) 957-8270	SCALE 1"=400' DRAWN BY CAB CHECKED BY GBK DATE 2/11/94	LOW TIDE UPPER AQUIFER WATER TABLE MAP SOUTHERN WOOD PIEDMONT/ WILMINGTON, N.C. FACILITY	FIGURE NO. 6 CADD NO. G:5301501A PROJECT NO. 12-53015.00



LEGEND

- PERMANENT MONITORING WELLS
- STAFF GAUGE
- GROUNDWATER ISOELEVATION LINE
- 1.75 GROUNDWATER ELEVATION
- GROUNDWATER FLOW DIRECTION
- GROUNDWATER INFLECTION LINE

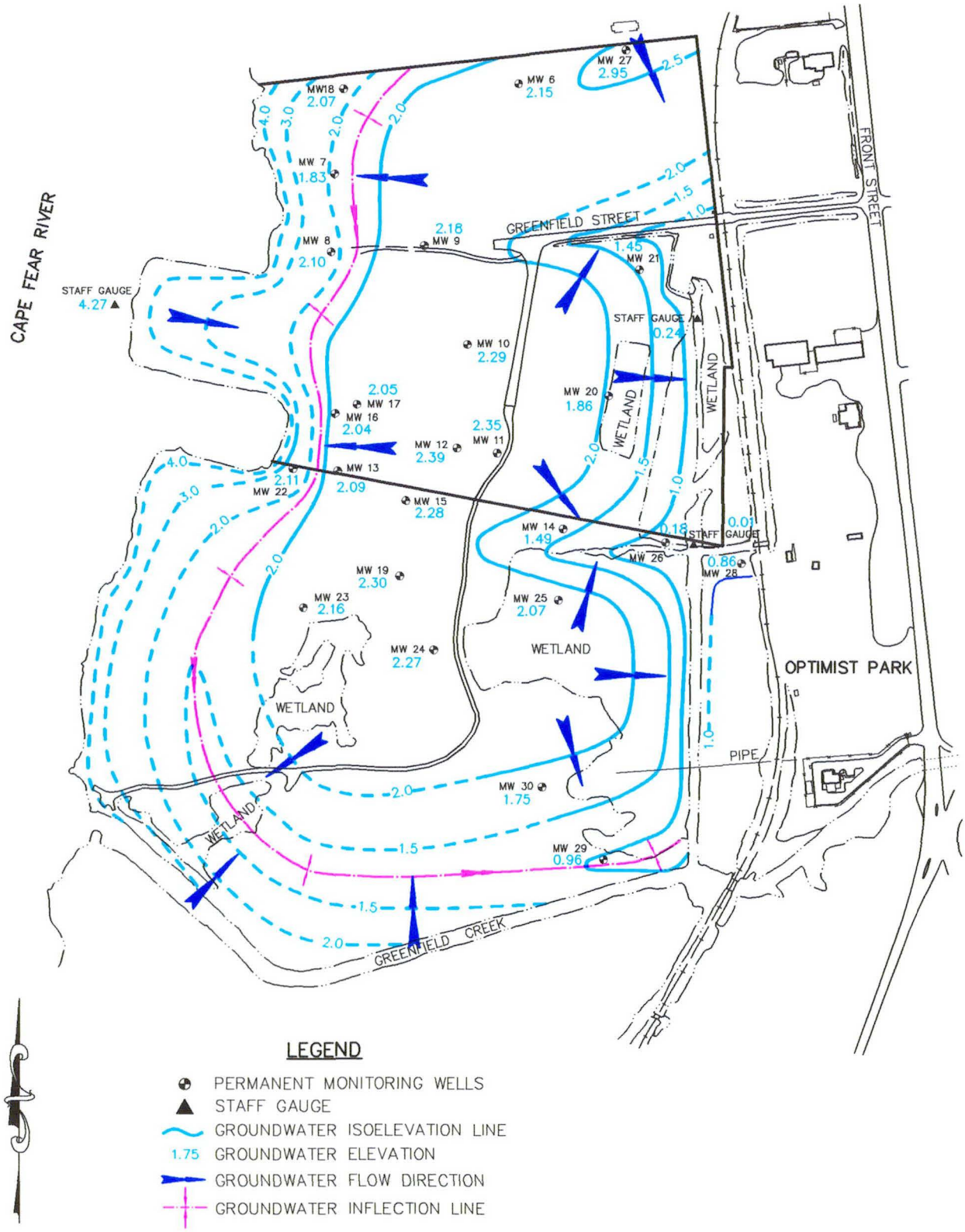
ViroGroup ETE, Division P.O. Box 1867 • 1445 Plegah Church Rd. • Lexington, S.C. 29072 (803) 957-8270	SCALE 1"=400' DRAWN BY CAB CHECKED BY GBK DATE 2/11/94	ONE QUARTER LOW TIDE UPPER AQUIFER WATER TABLE MAP SOUTHERN WOOD PIEDMONT/ WILMINGTON, N.C. FACILITY	FIGURE NO. 7 CADD NO. G:5301501A PROJECT NO. 12-53015.00



LEGEND

- PERMANENT MONITORING WELLS
- STAFF GAUGE
- GROUNDWATER ISOELEVATION LINE
- 1.75 GROUNDWATER ELEVATION
- GROUNDWATER FLOW DIRECTION
- GROUNDWATER INFLECTION LINE

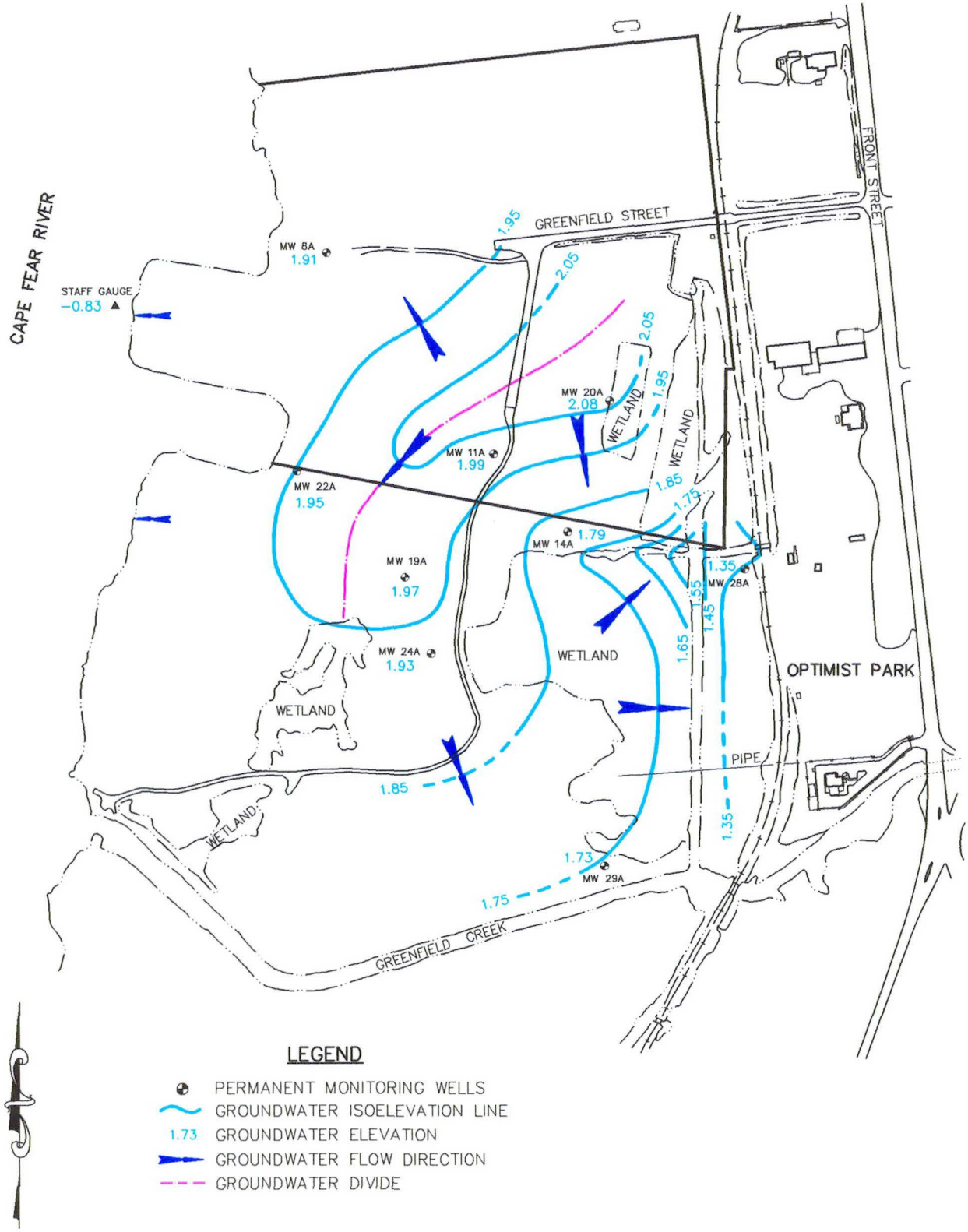
ViroGroup ETE, Division P.O. Box 1867 • 1445 Piegah Church Rd. • Lexington, S.C. 29072 (803) 957-8270	SCALE 1"=400' DRAWN BY CAB CHECKED BY GBK DATE 2/11/94	THREE QUARTER HIGH TIDE UPPER AQUIFER WATER TABLE MAP SOUTHERN WOOD PIEDMONT/ WILMINGTON, N.C. FACILITY	FIGURE NO. 8 CADD NO. G:5301501A PROJECT NO. 12-53015.00



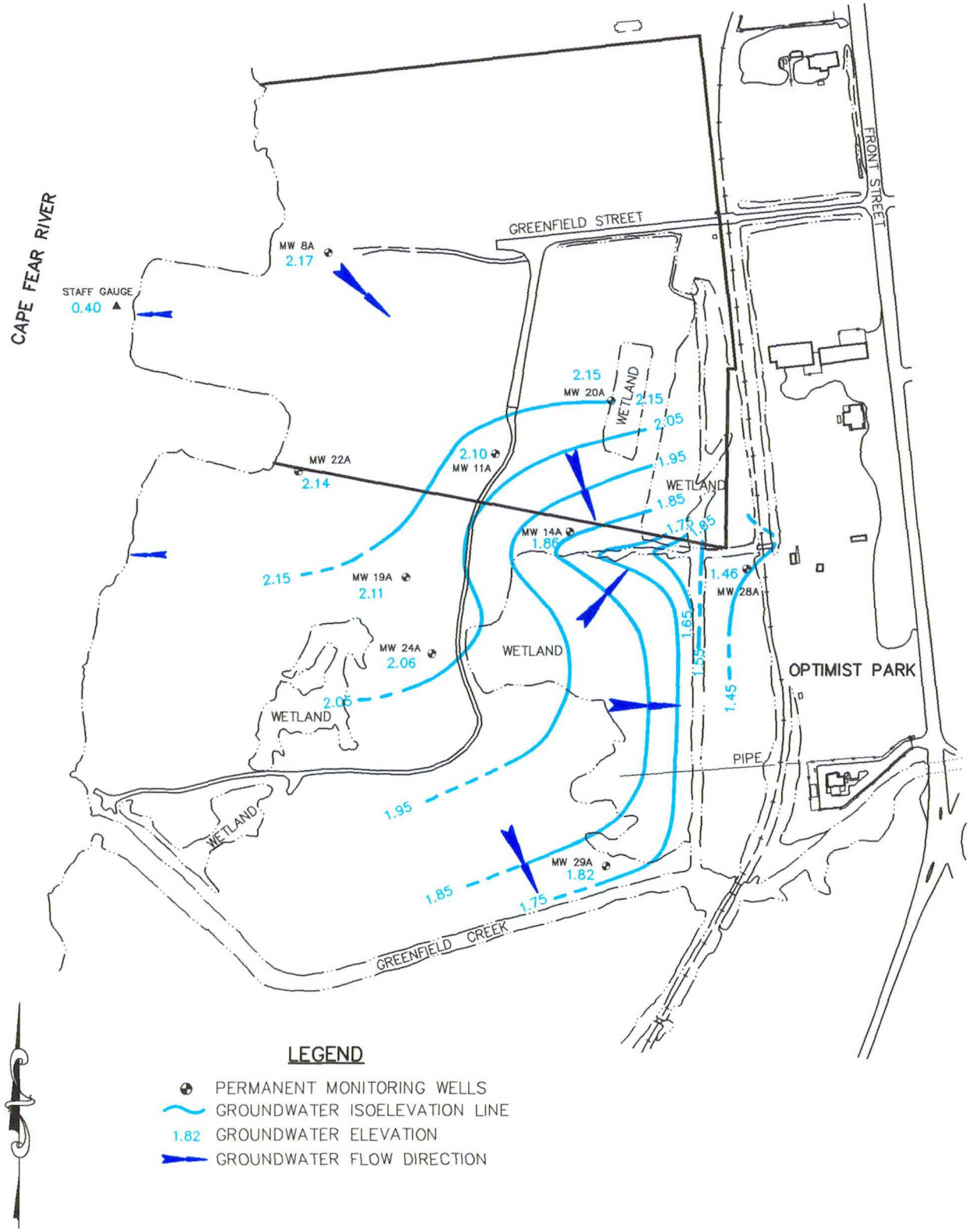
LEGEND

- PERMANENT MONITORING WELLS
- STAFF GAUGE
- GROUNDWATER ISOELEVATION LINE
- 1.75 GROUNDWATER ELEVATION
- GROUNDWATER FLOW DIRECTION
- GROUNDWATER INFLECTION LINE

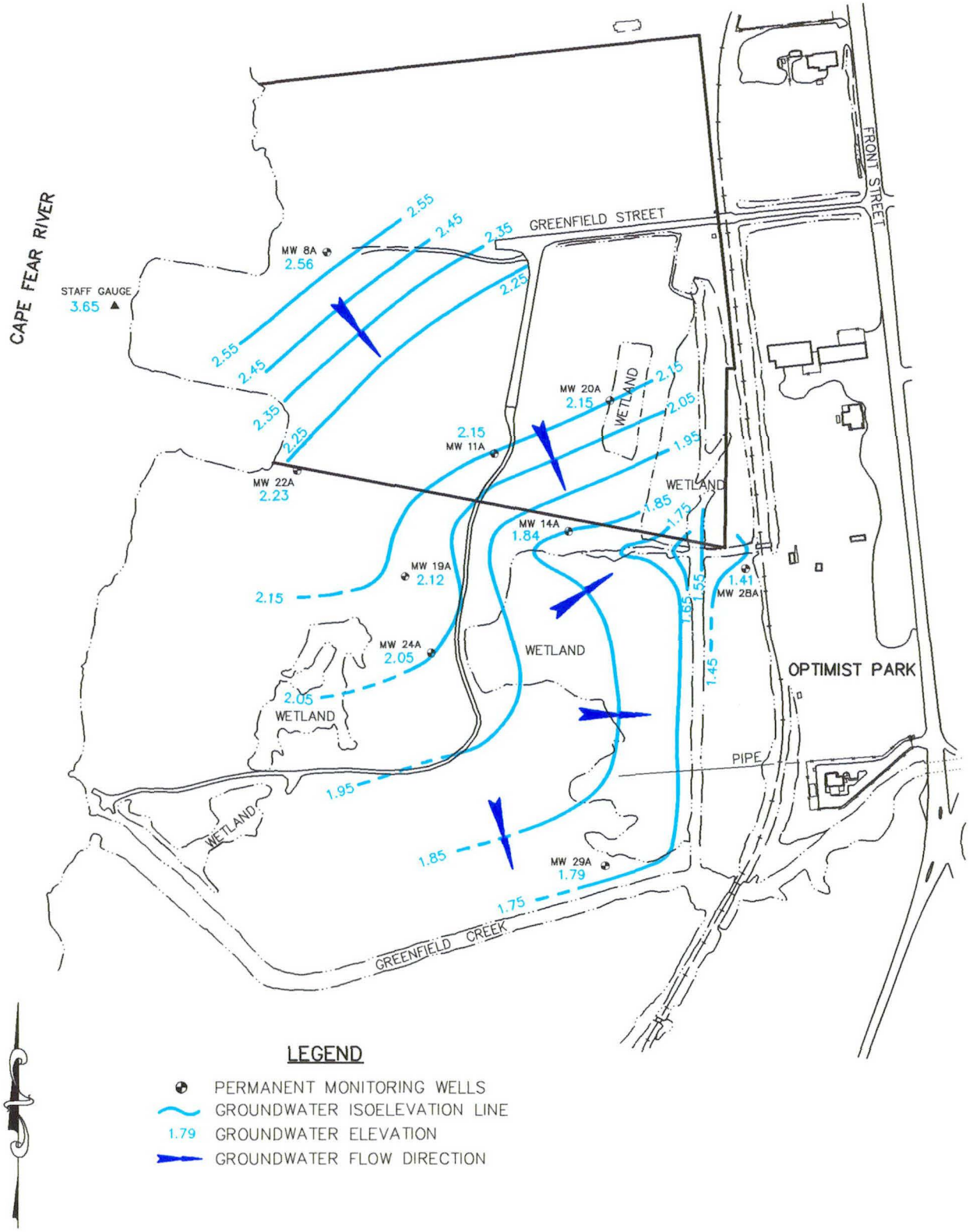
ViroGroup ETE, Division P.O. Box 1867 • 1445 Piegah Church Rd. • Lexington, S.C. 29072 (803) 957-8270	SCALE 1"=400' DRAWN BY CAB CHECKED BY GBK DATE 2/11/94	HIGH TIDE UPPER AQUIFER WATER TABLE MAP SOUTHERN WOOD PIEDMONT/ WILMINGTON, N.C. FACILITY	FIGURE NO. 9 CADD NO. G:5301501A PROJECT NO. 12-53015.00



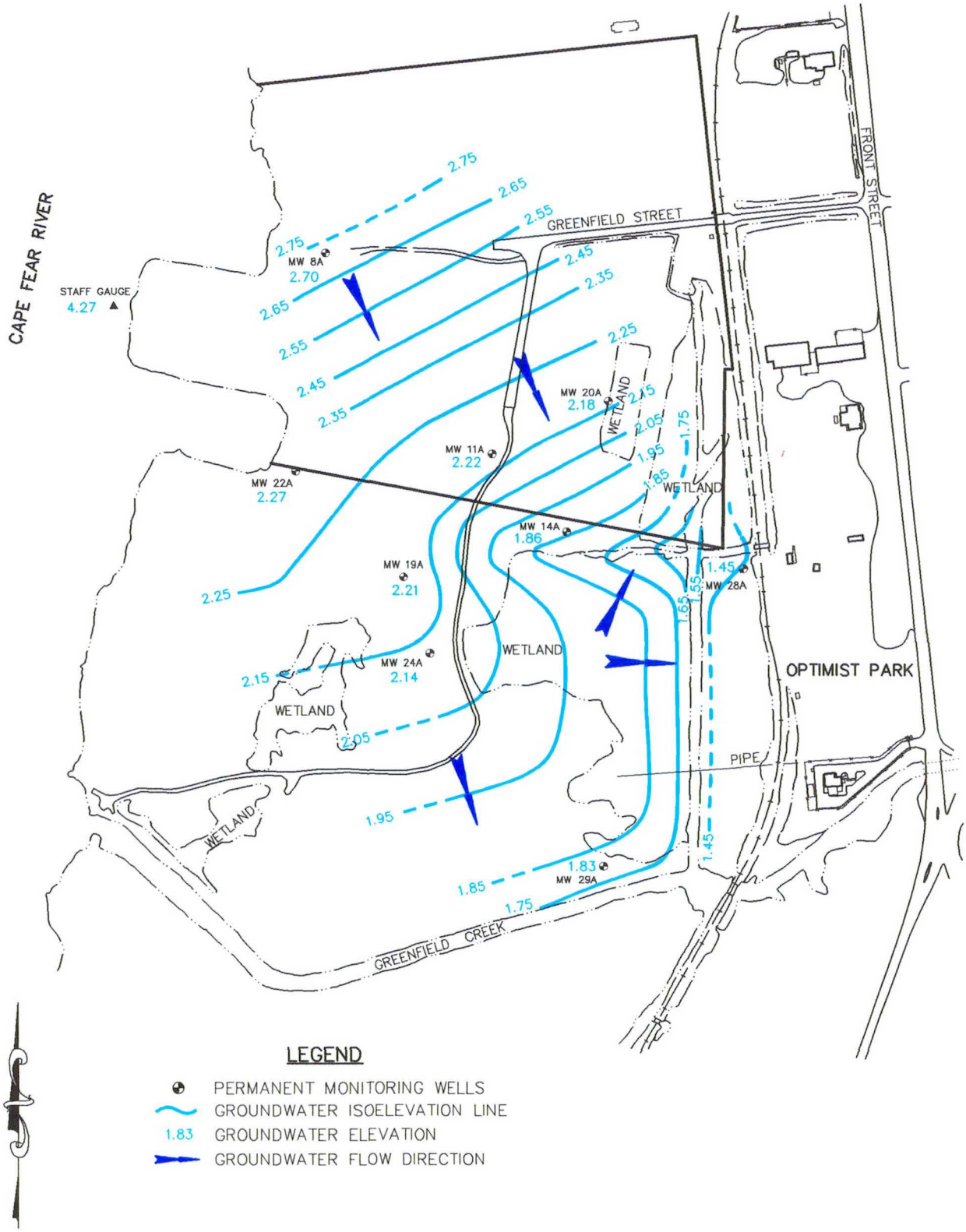
ViroGroup ETE, Division P.O. Box 1867 • 1445 Plaugh Church Rd. • Lexington, S.C. 29072 (803) 957-8270	SCALE 1"=400' DRAWN BY CAB CHECKED BY GBK DATE 2/11/94	LOW TIDE LOWER AQUIFER POTENTIOMETRIC MAP SOUTHERN WOOD PIEDMONT/ WILMINGTON, N.C. FACILITY	FIGURE NO. 10 CADD NO. G: 5301501B PROJECT NO. 12-53015.00



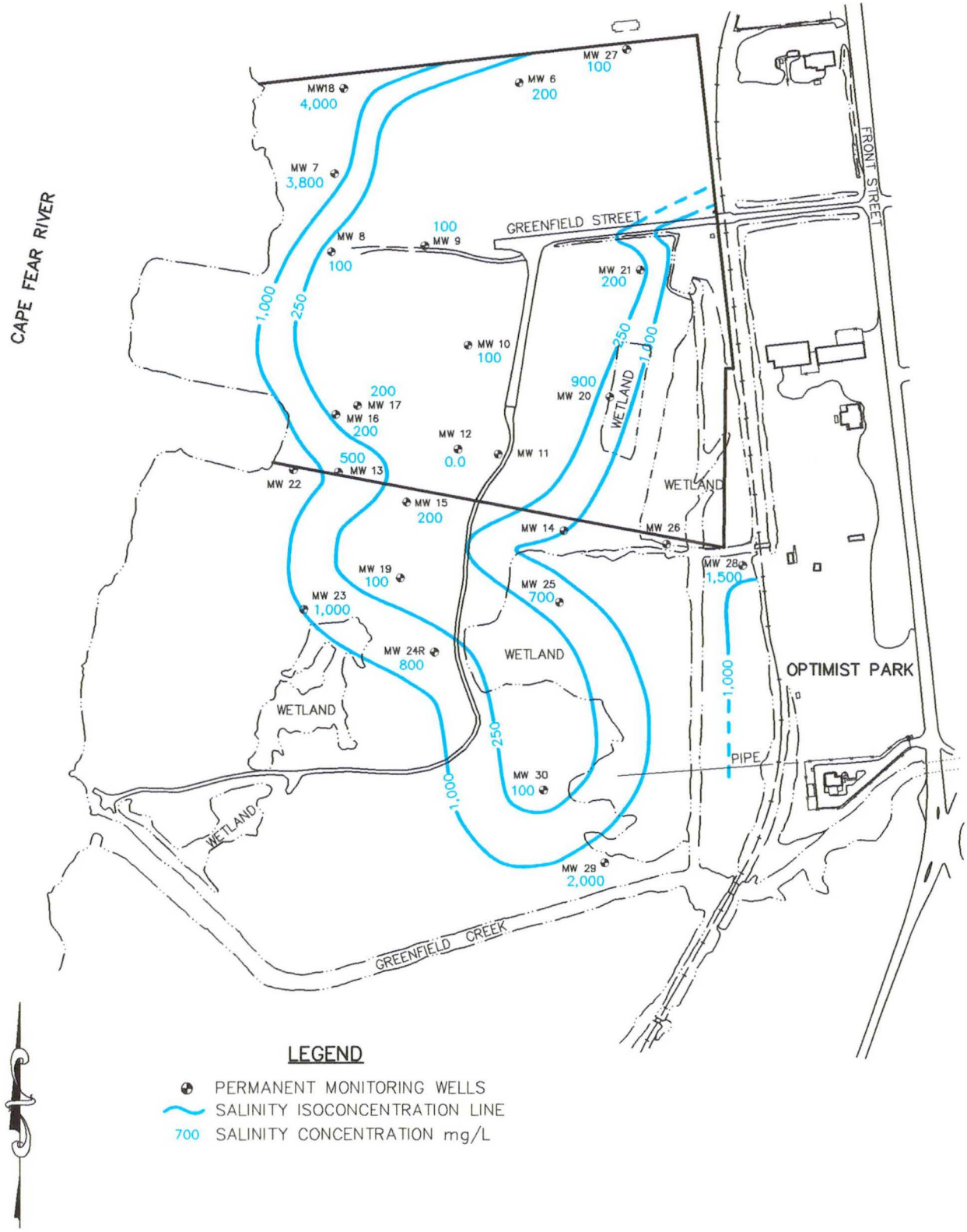
ViroGroup ETE, Division P.O. Box 1867 • 1445 Pisgah Church Rd. • Lexington, S.C. 29072 (803) 957-6270	SCALE 1"=400' DRAWN BY CAB CHECKED BY GBK DATE 2/11/94	ONE QUARTER LOW TIDE LOWER AQUIFER POTENTIOMETRIC MAP SOUTHERN WOOD PIEDMONT/ WILMINGTON, N.C. FACILITY	FIGURE NO. 11 CADD NO. G: 5301501B PROJECT NO. 12-53015.00



ViroGroup ETE, Division P.O. Box 1867 • 1445 Plegah Church Rd. • Lexington, S.C. 29072 (803) 957-8270	SCALE 1"=400' DRAWN BY CAB CHECKED BY GBK DATE 2/11/94	THREE QUARTER HIGH TIDE LOWER AQUIFER POTENTIOMETRIC MAP SOUTHERN WOOD PIEDMONT/ WILMINGTON, N.C. FACILITY	FIGURE NO. 12 CADD NO. G:5301501B PROJECT NO. 12-53015.00



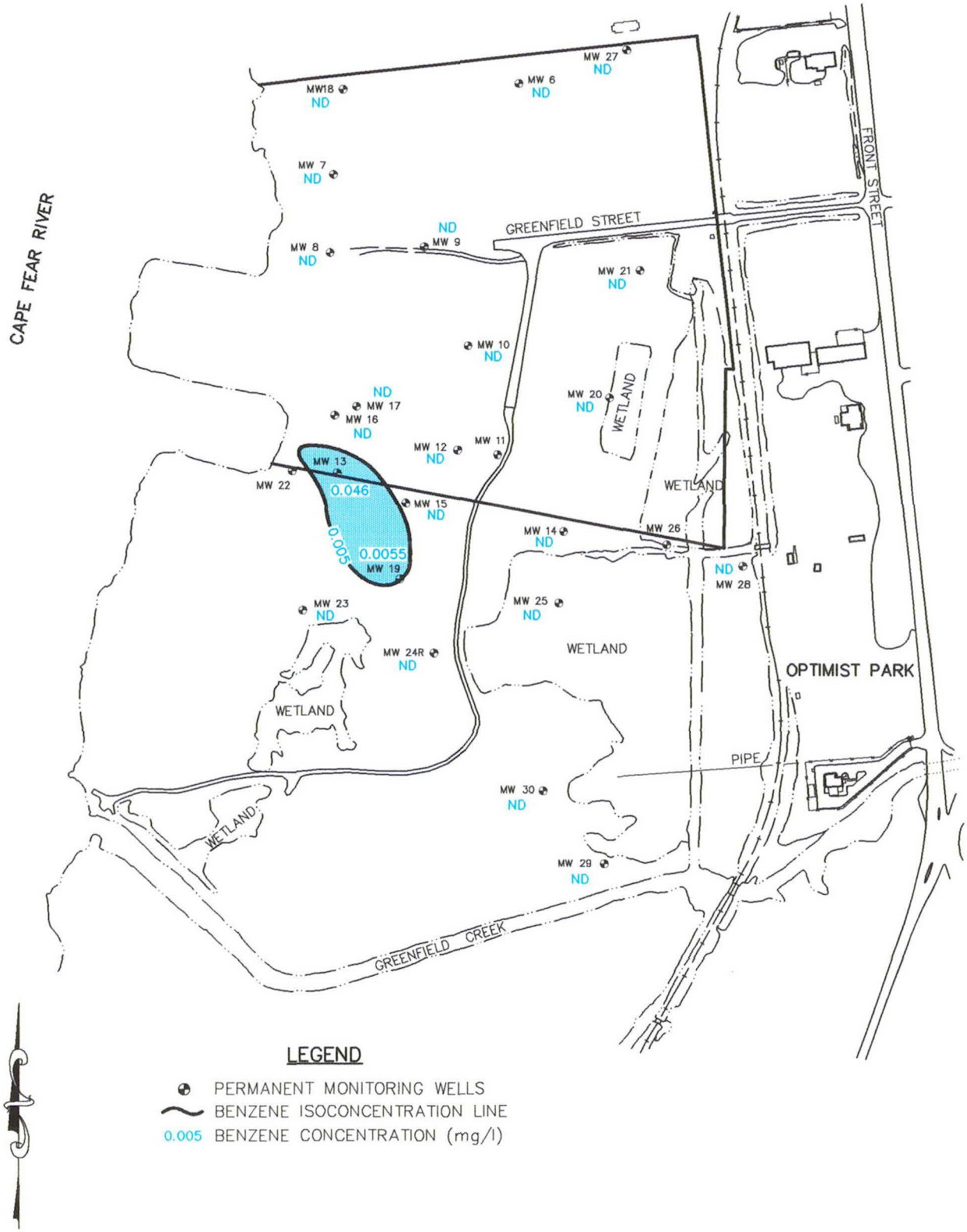
ViroGroup ETE, Division P.O. Box 1867 • 1445 Plegah Church Rd. • Lexington, S.C. 29072 (803) 957-8270	SCALE 1"=400' DRAWN BY CAB CHECKED BY GBK DATE 2/11/94	HIGH TIDE LOWER AQUIFER POTENTIOMETRIC MAP SOUTHERN WOOD PIEDMONT/ WILMINGTON, N.C. FACILITY	FIGURE NO. 13 CADD NO. G:5301501B PROJECT NO. 12-53015.00



ViroGroup ETE, Division P.O. Box 1867 • 1445 Pisgah Church Rd. • Lexington, S.C. 29072 (803) 957-8270	SCALE 1"=400' DRAWN BY CAB CHECKED BY GBK DATE 2/11/94	UPPER AQUIFER SALINITY ISOCONCENTRATION MAP SOUTHERN WOOD PIEDMONT/ WILMINGTON, N.C. FACILITY	FIGURE NO. 14 CADD NO. G:5301501A PROJECT NO. 12-53015.00

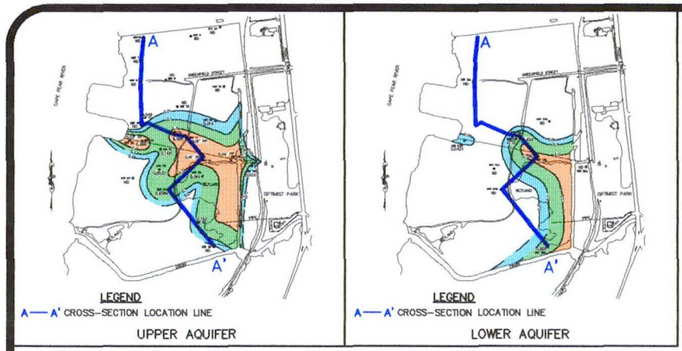
ViroGroup ETE, Division P.O. Box 1867 • 1445 Plegah Church Rd. • Lexington, S.C. 29072 (803) 957-8270	SCALE 1"=400' DRAWN BY CAB CHECKED BY GBK DATE 2/11/94	UPPER AQUIFER ORGANIC WOOD PRESERVING CONSTITUENTS ISOCONCENTRATION MAP SOUTHERN WOOD PIEDMONT/ WILMINGTON, N.C. FACILITY	FIGURE NO. 15 CADD NO. G: 5301501A PROJECT NO. 12-53015.00

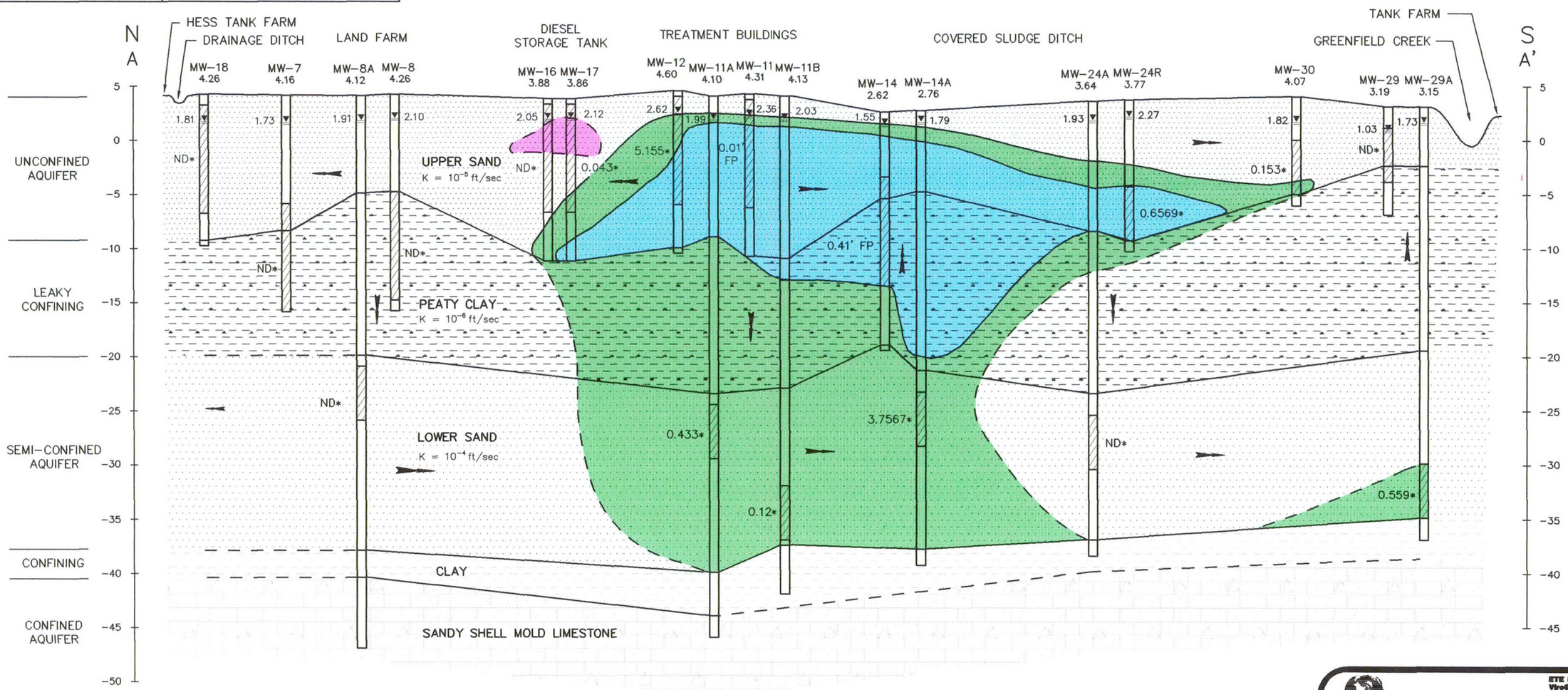
ViroGroup ETE, Division P.O. Box 1867 • 1445 Plegah Church Rd. • Lexington, S.C. 29072 (803) 957-8270	SCALE 1"=400' DRAWN BY CAB CHECKED BY GBK DATE 2/11/94	LOWER AQUIFER ORGANIC WOOD PRESERVING CONSTITUENTS ISOCONCENTRATION MAP SOUTHERN WOOD PIEDMONT/ WILMINGTON, N.C. FACILITY	FIGURE NO. 16 CADD NO. G: 5301501B PROJECT NO. 12-53015.00



ViroGroup ETE, Division P.O. Box 1867 • 1445 Plegah Church Rd. • Lexington, S.C. 29072 (803) 957-8270	SCALE 1"=400' DRAWN BY CAB CHECKED BY GBK DATE 2/11/94	UPPER AQUIFER BENZENE ISOCONCENTRATION MAP SOUTHERN WOOD PIEDMONT/ WILMINGTON, N.C. FACILITY	FIGURE NO. 17 CADD NO. G: 5301501A PROJECT NO. 12-53015.00

NO.	REVISION	DATE	BY





LEGEND

- UPPER SAND
- PEATY CLAY
- LOWER SAND
- CLAY
- SANDY SHELL MOLD LIMESTONE
- RESIDUAL & POOLED WOOD PRESERVING CONSTITUENTS
- RESIDUAL DIESEL CONSTITUENTS
- DISSOLVED WOOD PRESERVING CONSTITUENTS ORGANIC PLUME
- SCREEN INTERVAL
- 0.98 ▼ GROUNDWATER ELEVATION
- ND* DISSOLVED ORGANICS (mg/l)
- 0.01' FP FREE PRODUCT (FT.)
- K HYDRAULIC CONDUCTIVITY
- GROUNDWATER GRADIENT

SCALE

HORIZONTAL: 1" = 300'
VERTICAL: 1" = 10'

NOTE:
HORIZONTAL SPACING BETWEEN WELLS IN THE WELL CLUSTERS ARE NOT TO SCALE, (IE: MW-11, MW-11A, & MW-11B).

ViroGroup Air•Water•Soil TECHNOLOGY
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Watts 1-800-786-0654

HYDROGEOLOGIC CROSS-SECTION A – A'

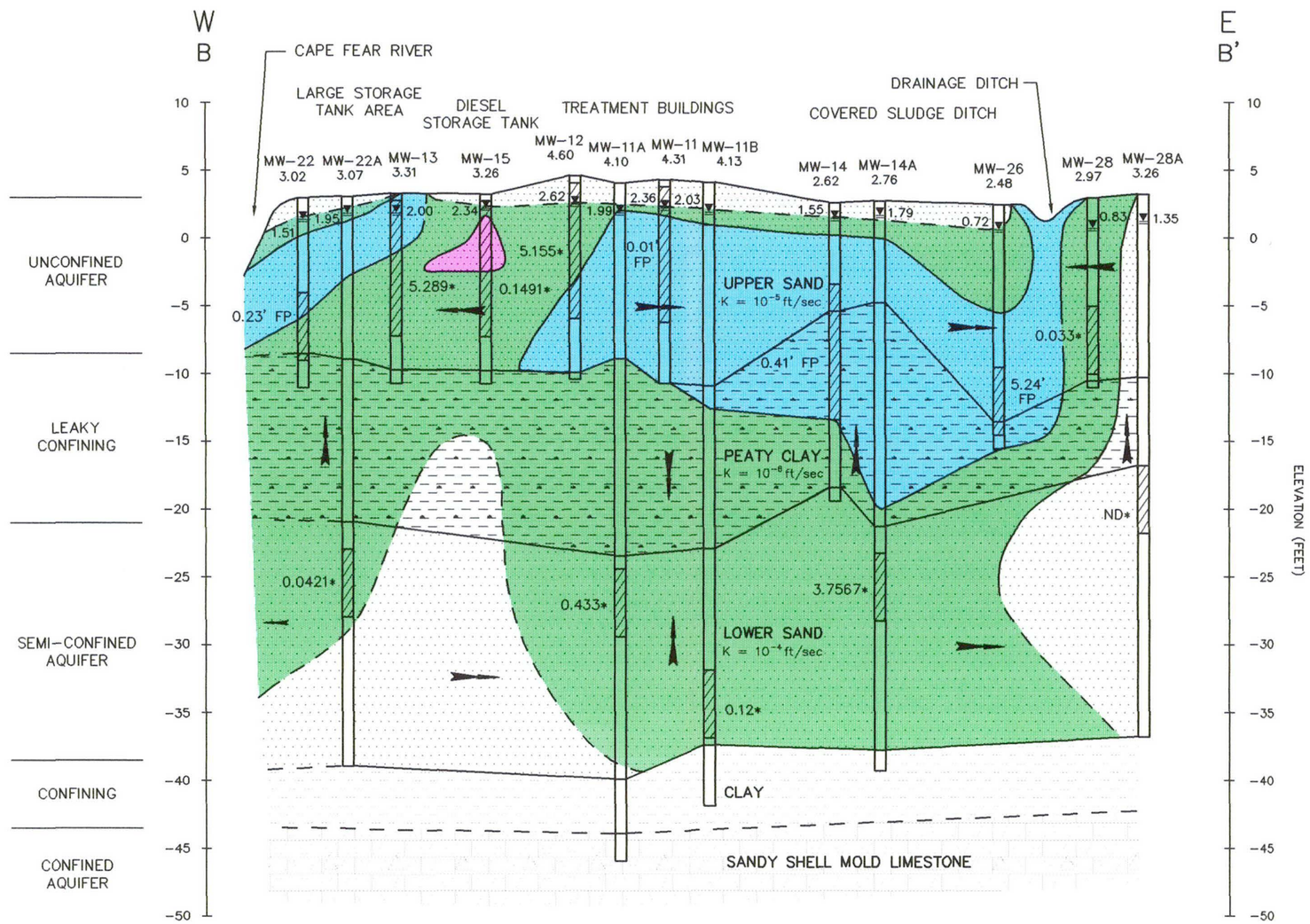
SOUTHERN WOOD PIEDMONT/ WILMINGTON, N.C. FACILITY

DRAWN BY:	CAB	DATE:	3/2/94
DESIGNED BY:	GBK	CADD NO:	G:530AA
APPROVED BY:		PROJECT NO:	12-53015.00
SCALE:	AS SHOWN	FIGURE NO.	18

NO.	REVISION	DATE	BY

UPPER AQUIFER

LOWER AQUIFER



LEGEND

- UPPER SAND
- PEATY CLAY
- LOWER SAND
- CLAY
- SANDY SHELL MOLD LIMESTONE
- RESIDUAL & POOLED WOOD PRESERVING CONSTITUENTS
- RESIDUAL DIESEL CONSTITUENTS
- DISSOLVED WOOD PRESERVING CONSTITUENTS ORGANIC PLUME
- SCREEN INTERVAL
- 0.98 ▼ GROUNDWATER ELEVATION
- ND* DISSOLVED ORGANICS (mg/l)
- 0.01' FP FREE PRODUCT (FT.)
- K HYDRAULIC CONDUCTIVITY
- GROUNDWATER GRADIENT

SCALE

HORIZONTAL: 1" = 300'
VERTICAL: 1" = 10'

NOTE:
HORIZONTAL SPACING BETWEEN WELLS IN THE WELL CLUSTERS ARE NOT TO SCALE, (IE: MW-11, MW-11A, & MW-11B).

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HYDROGEOLOGIC CROSS-SECTION B – B'

SOUTHERN WOOD PIEDMONT/ WILMINGTON, N.C. FACILITY

DRAWN BY:	CAB	DATE:	3/2/94
DESIGNED BY:	GBK	CADD NO:	G:530BB
APPROVED BY:		PROJECT NO:	12-53015.00
SCALE:	AS SHOWN	FIGURE NO.	19

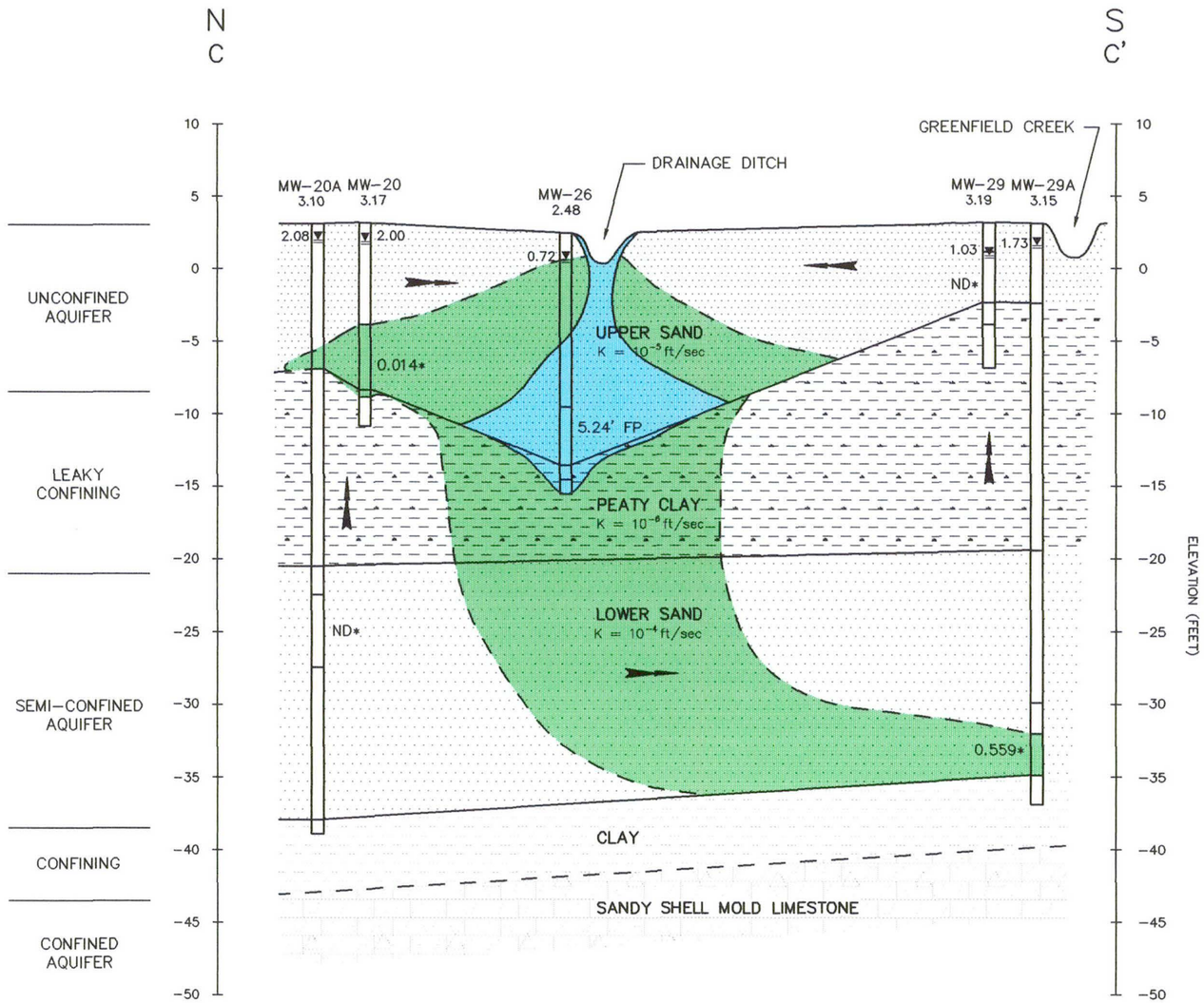
NO.	REVISION	DATE	BY

LEGEND
C—C' CROSS-SECTION LOCATION LINE

UPPER AQUIFER

LEGEND
C—C' CROSS-SECTION LOCATION LINE

LOWER AQUIFER



LEGEND

- UPPER SAND
- PEATY CLAY
- LOWER SAND
- CLAY
- SANDY SHELL MOLD LIMESTONE
- RESIDUAL & POOLED WOOD PRESERVING CONSTITUENTS
- RESIDUAL DIESEL CONSTITUENTS
- DISSOLVED WOOD PRESERVING CONSTITUENTS ORGANIC PLUME
- SCREEN INTERVAL
- 0.98 ▼ GROUNDWATER ELEVATION
- ND* DISSOLVED ORGANICS (mg/l)
- 0.01' FP FREE PRODUCT (FT.)
- K HYDRAULIC CONDUCTIVITY
- GROUNDWATER GRADIENT

SCALE

HORIZONTAL: 1" = 300'
VERTICAL: 1" = 10'

NOTE:
HORIZONTAL SPACING BETWEEN WELLS IN THE WELL CLUSTERS ARE NOT TO SCALE, (IE: MW-11, MW-11A, & MW-11B).

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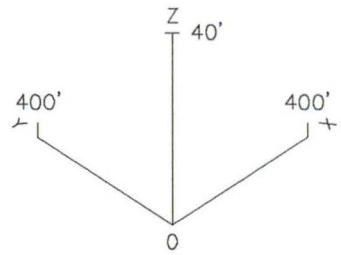
HYDROGEOLOGIC CROSS-SECTION C – C'

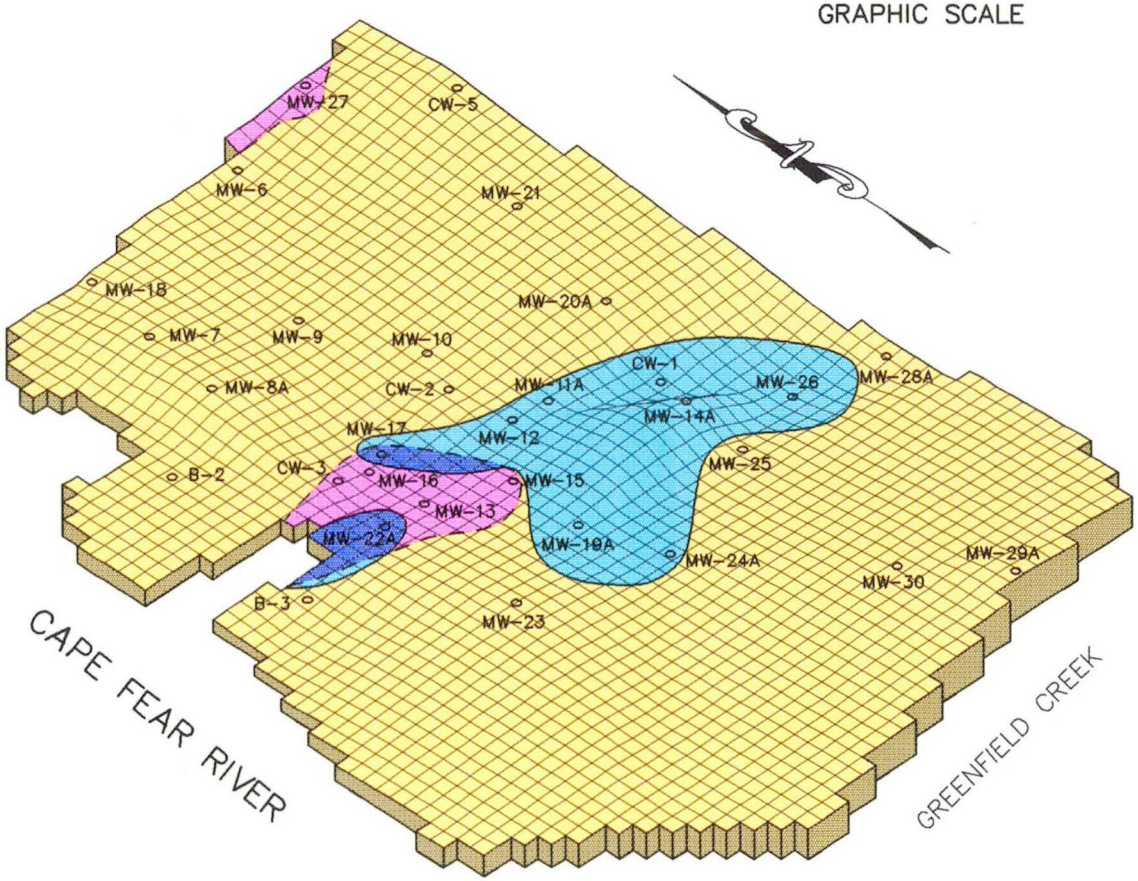
SOUTHERN WOOD PIEDMONT/ WILMINGTON, N.C. FACILITY

DRAWN BY:	CAB	DATE:	3/2/94
DESIGNED BY:	GBK	CADD NO:	G:530CC
APPROVED BY:		PROJECT NO:	12-53015.00
SCALE:	AS SHOWN	FIGURE NO.	20

NOTE: VERTICAL EXAGGERATION = 10:1

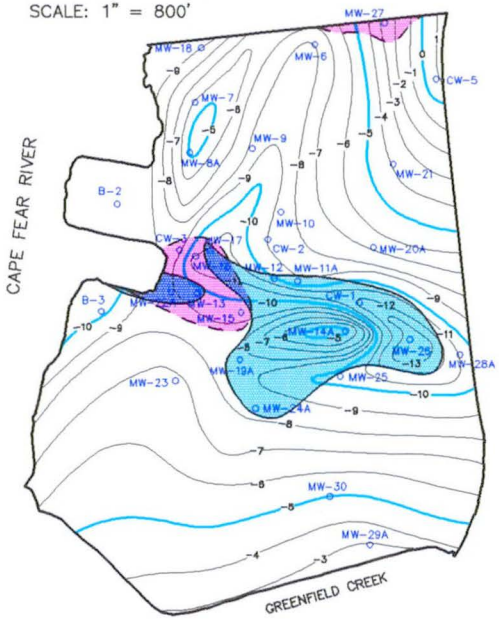


GRAPHIC SCALE



CONTOUR MAP

CONTOUR INTERVAL = 1.0 ft.
SCALE: 1" = 800'



LEGEND

- TOP OF PEAT
- POOLED & RESIDUAL WOOD PRESERVING CONSTITUENTS
- RESIDUAL DIESEL CONSTITUENTS

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SCALE	AS SHOWN
DRAWN BY	CAB
CHECKED BY	GBK
DATE	4/15/94

PEATY CLAY SURFACE AND SOIL STAINING LOCATION MAP
SOUTHERN WOOD PIEDMONT/ WILMINGTON, N.C. FACILITY

FIGURE NO. 21

CADD NO. 530CON3D

PROJECT NO. 12-53015.00

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Watts 1-800-786-0654

SCALE	1:24,000
DRAWN BY	CAB
CHECKED BY	GBK
DATE	7/8/94

CAPE FEAR RIVER SURFACE WATER SAMPLE LOCATION MAP
SOUTHERN WOOD PIEDMONT/ WILMINGTON, N.C. FACILITY

FIGURE NO.	22
CADD NO.	G:5301501
PROJECT NO.	12-53015.00

Historical Groundwater Elevation Summary Table

HISTORICAL GROUNDWATER ELEVATION SUMMARY TABLE
SOUTHERN WOOD PIEDMONT FACILITY
WILMINGTON, NORTH CAROLINA

WELL #	DATE	TIME	RISER ELEV	DEPTH TO WATER	GROUNDWATER ELEVATION
Ditch Staff Gauge	4-1-92	7:00	6.64	1.90	1.88
	4-1-92	9:00	6.64	2.40	2.38
	4-1-92	11:00	6.64	2.13	2.11
	4-1-92	13:00	6.64	0.20	0.18
	4-1-92	15:00	6.64	0.10	0.08
	4-1-92	17:00	6.64	0.26	0.24
	4-1-92	19:00	6.64	1.85	1.83
	10-13-92		6.64	-0.05	-0.07
River Staff Gauge	4-1-92	7:00	5.93	4.70	3.97
	4-1-92	9:00	5.93	4.75	4.02
	4-1-92	11:00	5.93	3.20	2.47
	4-1-92	13:00	5.93	1.65	0.92
	4-1-92	15:00	5.93	0.60	-0.13
	4-1-92	17:00	5.93	2.80	2.07
	4-1-92	19:00	5.93	4.80	4.07
	10-13-92		5.93	-0.41	-1.14
B-2	4-1-92	7:00	6.96	5.45	1.51
	4-1-92	9:00	6.96	5.30	1.66
	4-1-92	11:00	6.96	5.45	1.51
	4-1-92	13:00	6.96	5.72	1.24
	4-1-92	15:00	6.96	5.87	1.09
	4-1-92	17:00	6.96	5.78	1.18
	4-1-92	19:00	6.96	5.40	1.56
B-3	4-1-92	7:00	5.13	3.00	2.13
	4-1-92	9:00	5.13	2.67	2.46
	4-1-92	11:00	5.13	3.12	2.01
	4-1-92	13:00	5.13	3.70	1.43
	4-1-92	15:00	5.13	3.96	1.17
	4-1-92	17:00	5.13	3.78	1.35
	4-1-92	19:00	5.13	2.98	2.14
B-4	4-1-92	7:00	4.18	1.47	2.71
	4-1-92	9:00	4.18	1.45	2.73
	4-1-92	11:00	4.18	1.43	2.75
	4-1-92	13:00	4.18	1.40	2.78
	4-1-92	15:00	4.18	1.38	2.80
	4-1-92	17:00	4.18	1.38	2.80
	4-1-92	19:00	4.18	1.41	2.77
B-5	4-1-92	7:00	5.79	3.38	2.41
	4-1-92	9:00	5.79	3.36	2.43
	4-1-92	11:00	5.79	3.41	2.38
	4-1-92	13:00	5.79	3.38	2.41
	4-1-92	15:00	5.79	3.36	2.43
	4-1-92	17:00	5.79	3.36	2.43
	4-1-92	19:00	5.79	3.38	2.41

WELL #	DATE	TIME	RISER ELEV	DEPTH TO WATER	GROUNDWATER ELEVATION
B-6	4-1-92	7:00	6.06	4.20	1.86
	4-1-92	9:00	6.06	4.17	1.89
	4-1-92	11:00	6.06	4.13	1.93
	4-1-92	13:00	6.06	4.12	1.94
	4-1-92	15:00	6.06	4.14	1.92
	4-1-92	17:00	6.06	4.16	1.90
	4-1-92	19:00	6.06	4.19	1.87
MW-6	4-1-92	7:00	5.07	2.78	2.29
	4-1-92	9:00	5.07	2.76	2.31
	4-1-92	11:00	5.07	2.72	2.35
	4-1-92	13:00	5.07	2.72	2.35
	4-1-92	15:00	5.07	2.70	2.37
	4-1-92	17:00	5.07	2.73	2.34
	4-1-92	19:00	5.07	2.74	2.33
	10-13-92		5.07	2.55	2.52
MW-7	4-1-92	7:00	6.03	4.34	1.69
	4-1-92	9:00	6.03	4.22	1.81
	4-1-92	11:00	6.03	4.19	1.84
	4-1-92	13:00	6.03	4.30	1.73
	4-1-92	15:00	6.03	4.37	1.66
	4-1-92	17:00	6.03	4.40	1.63
	4-1-92	19:00	6.03	4.28	1.75
	10-13-92		6.03	3.66	2.37
MW-8	4-1-92	7:00	6.80	4.68	2.12
	4-1-92	9:00	6.80	4.64	2.16
	4-1-92	11:00	6.80	4.62	2.18
	4-1-92	13:00	6.80	4.58	2.22
	4-1-92	15:00	6.80	4.55	2.25
	4-1-92	17:00	6.80	4.55	2.25
	4-1-92	19:00	6.80	4.52	2.28
	10-13-92		6.80	4.22	2.58
MW-8A	10-13-92		6.43	3.43	3.00
MW-9	4-1-92	7:00	6.43	4.28	2.15
	4-1-92	9:00	6.43	4.26	2.17
	4-1-92	11:00	6.43	4.19	2.24
	4-1-92	13:00	6.43	4.16	2.27
	4-1-92	15:00	6.43	4.14	2.29
	4-1-92	17:00	6.43	4.16	2.27
	4-1-92	19:00	6.43	4.19	2.24
	10-13-92		6.43	3.82	2.61
MW-10	4-1-92	7:00	7.41	4.85	2.56
	4-1-92	9:00	7.41	4.84	2.57
	4-1-92	11:00	7.41	4.82	2.59
	4-1-92	13:00	7.41	4.80	2.61
	4-1-92	15:00	7.41	4.78	2.63
	4-1-92	17:00	7.41	4.80	2.61
	4-1-92	19:00	7.41	4.83	2.58
	10-13-92		7.41	4.56	2.85

WELL #	DATE	TIME	RISER ELEV	DEPTH TO WATER	GROUNDWATER ELEVATION
MW-11	4-1-92	7:00	8.02	5.34	2.68
	4-1-92	9:00	8.02	5.33	2.69
	4-1-92	11:00	8.02	5.31	2.71
	4-1-92	13:00	8.02	5.27	2.75
	4-1-92	15:00	8.02	5.22	2.80
	4-1-92	17:00	8.02	5.20	2.82
	4-1-92	19:00	8.02	5.26	2.76
	10-13-92		8.02	5.19	2.83
MW-11A	10-13-92		6.38	3.89	2.49
MW-12	4-1-92	7:00	8.22	5.55	2.67
	4-1-92	9:00	8.22	5.55	2.67
	4-1-92	11:00	8.22	5.51	2.71
	4-1-92	13:00	8.22	5.49	2.73
	4-1-92	15:00	8.22	5.45	2.77
	4-1-92	17:00	8.22	5.45	2.77
	4-1-92	19:00	8.22	5.50	2.72
	10-13-92		8.22	5.46	2.76
MW-13	4-1-92	7:00	6.97	4.75	2.22
	4-1-92	9:00	6.97	4.55	2.42
	4-1-92	11:00	6.97	4.55	2.42
	4-1-92	13:00	6.97	4.65	2.32
	4-1-92	15:00	6.97	4.68	2.29
	4-1-92	17:00	6.97	4.72	2.25
	4-1-92	19:00	6.97	4.65	2.32
	10-13-92		6.97	4.49	2.48
MW-14	4-1-92	7:00	6.30	4.38	1.92
	4-1-92	9:00	6.30	4.28	2.02
	4-1-92	11:00	6.30	4.15	2.15
	4-1-92	13:00	6.30	4.12	2.18
	4-1-92	15:00	6.30	4.09	2.21
	4-1-92	17:00	6.30	4.12	2.18
	4-1-92	19:00	6.30	4.18	2.12
	10-13-92		6.30	4.00	2.30
MW-15	4-1-92	7:00	7.07	4.51	2.56
	4-1-92	9:00	7.07	4.47	2.60
	4-1-92	11:00	7.07	4.43	2.64
	4-1-92	13:00	7.07	4.41	2.66
	4-1-92	15:00	7.07	4.38	2.69
	4-1-92	17:00	7.07	4.38	2.69
	4-1-92	19:00	7.07	4.44	2.63
	10-13-92		7.07	4.50	2.57
MW-16	4-1-92	7:00	7.69	5.50	2.19
	4-1-92	9:00	7.69	5.40	2.29
	4-1-92	11:00	7.69	5.42	2.27
	4-1-92	13:00	7.69	5.50	2.19
	4-1-92	15:00	7.69	5.53	2.16
	4-1-92	17:00	7.69	5.55	2.14
	4-1-92	19:00	7.69	5.50	2.19
	10-13-92		7.69	5.04	2.65

WELL #	DATE	TIME	RISER ELEV	DEPTH TO WATER	GROUNDWATER ELEVATION
MW-17	4-1-92	7:00	7.65	5.40	2.25
	4-1-92	9:00	7.65	5.35	2.30
	4-1-92	11:00	7.65	5.32	2.33
	4-1-92	13:00	7.65	5.35	2.30
	4-1-92	15:00	7.65	5.38	2.27
	4-1-92	17:00	7.65	5.40	2.25
	4-1-92	19:00	7.65	5.35	2.30
	10-13-92		7.65	4.99	2.66
MW-18	10-13-92		6.61	4.14	2.47
MW-19	10-13-92		5.44	2.92	2.52
MW-19A	10-13-92		5.25	2.91	2.34
MW-20	10-13-92		5.44	2.80	2.64
MW-21	10-13-92		5.34	3.22	2.12
MW-22	10-13-92		5.26	3.02	2.24
MW-23	10-13-92		4.96	4.56	0.40
MW-24	10-13-92		5.98	**3.48	5.98
MW-25	10-13-92		4.96	1.63	3.33
MW-26	10-13-92		4.91	4.01	0.90

*Staff Gauge Elevation : Riser Elevation – (6.66 – Depth to Water)

** Well has been abandoned

Historical Vertical Hydraulic Gradient Summary Table

HISTORICAL VERTICAL HYDRAULIC GRADIENT SUMMARY TABLE
SOUTHERN WOOD PIEDMONT FACILITY
WILMINGTON, NORTH CAROLINA

WELL PAIR	DATE	GW ELEVATION UPPER AQUIFER	GW ELEVATION LOWER AQUIFER	MID SCREEN ELEV. UPPER AQUIFER	MID SCREEN ELEV. LOWER AQUIFER	VERT. HYDRAULIC GRADIENT
MW-8/MW-8A	10/92	2.06	2.34	-9.86	-24.13	-0.020
MW-11/MW-11A	10/92	2.79	2.48	-1.19	-27.29	+0.012
MW-14/MW-14A	10/92	2.57	2.52	-8.38	-25.89	+0.003

NOTE: Vertical Hydraulic Gradient = $\frac{\text{Upper Aquifer Elevation} - \text{Lower Aquifer Elevation}}{\text{Upper Aquifer Mid Screen Elevation} - \text{Lower Aquifer Mid Screen Elevation}}$

- Upward Vertical Hydraulic Gradient
+ Downward Vertical Hydraulic Gradient
All measurements in Feet
Vertical Hydraulic Gradient in ft/ft

Historical Soil Sample Parameter Summary Table - Metals

HISTORICAL SOIL SAMPLE PARAMETER SUMMARY TABLE
METALS
SOUTHERN WOOD PIEDMONT FACILITY
WILMINGTON, NORTH CAROLINA

	SS-1		SS-2		SS-3		SS-4		SS-5		SS-6		SS-7		SS-8		SS-9		SS-10		SS-11	
METALS	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*
Arsenic	3.5	1.2	5.2	1.2	ND	1.2	3.6	1.2	1.5	1.2	ND	1.2	2.3	1.2	ND	1.2	ND	1.2	ND	1.2	ND	1.2
Chromium	5.5	0.75	14.0	0.75	2.1	0.75	11.0	0.75	5.2	0.75	3.1	0.75	9.2	0.75	4.2	0.75	4.1	0.75	2.6	0.75	1.3	0.75
Copper	6.1	0.75	46.0	0.75	8.0	0.75	14.0	0.75	2.4	0.75	2.8	0.75	5.1	0.75	1.9	0.75	4.4	0.75	3.9	0.75	1.0	0.75
Lead	14.0	5.0	290.0	5.0	61.0	5.0	25.0	5.0	3.4	1.2	3.1	1.1	6.3	5.0	2.3	1.2	6.9	5.0	6.2	5.0	1.9	5.0

NOTE: All units in mg/kg dw
R = Laboratory Analytical Result
DL = Laboratory Detection Limit

Historical Soil Sample Parameter Summary Table - Semi-Volatiles

HISTORICAL SOIL SAMPLE PARAMETER SUMMARY TABLE
SEMI-VOLATILES
SOUTHERN WOOD PIEDMONT FACILITY
WILMINGTON, NORTH CAROLINA

	SS-1		SS-2		SS-3		SS-4		SS-5		SS-6		SS-7		SS-8		SS-9		SS-10		SS-11	
SEMI-VOLATILES	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*
Acenaphthene	0.51	0.33	ND	0.33	ND	0.33	0.59	0.33	4.4	0.33	2.9	0.33	44.0	0.33	1.0	0.33	32.0	0.33	ND	0.33	ND	0.33
Anthracene	ND	0.33	ND	0.33	ND	0.33	ND	0.33	45.0	0.33	36.0	0.33	10.0	0.33	ND	0.33	49.0	0.33	ND	0.33	ND	0.33
Benzo(a)Anthracene	1.1	0.33	0.54	0.33	ND	0.33	1.1	0.33	5.6	0.33	7.4	0.33	3.2	0.33	ND	0.33	26.0	0.33	730.0	0.33	ND	0.33
Benzo(a)Pyrene	0.42	0.33	ND	0.33	ND	0.33	2.0	0.33	3.1	0.33	1.9	0.33	0.64	0.33	ND	0.33	9.0	0.33	680.0	0.33	ND	0.33
Benzo(b)Fluoranthene	ND	0.33	0.75	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	15.0	0.33	1800.0	0.33	ND	0.33
Benzo(k)Fluoranthene	1.5	0.33	ND	0.33	ND	0.33	4.9	0.33	3.60	0.33	3.6	0.33	1.2	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33
Bis(2-Chloroethyl)Ether	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33
Carbazole	ND	0.33	ND	0.33	ND	0.33	ND	0.33	18.0	0.33	4.4	0.33	17.0	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33
4-Chloro-3-Methylphenol	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33
2-Chlorophenol	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33
Chrysene	1.1	0.33	0.53	0.33	ND	0.33	1.6	0.33	4.5	0.33	5.5	0.33	1.90	0.33	ND	0.33	22.0	0.33	920.0	0.33	ND	0.33
Dibenzo(a,h)Anthracene	ND	0.33	ND	0.33	ND	0.33	3.7	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	0.94	0.33	ND	0.33	ND	0.33
2,4-Dimethylphenol	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33
2,4-Dinitrophenol	ND	1.60	ND	1.60	ND	1.60	ND	1.60	ND	1.60	ND	1.60	ND	1.60	ND	1.60	ND	1.60	ND	1.60	ND	1.60
Fluoranthene	3.6	0.33	0.87	0.33	ND	0.33	1.8	0.33	38.0	0.33	52.0	0.33	26.0	0.33	ND	0.33	130.0	0.33	1300.0	0.33	ND	0.33
Indeno(1,2,3-cd)Pyrene	ND	0.33	ND	0.33	ND	0.33	2.0	0.33	0.67	0.33	0.72	0.33	ND	0.33	ND	0.33	3.4	0.33	680.0	0.33	ND	0.33
Naphthalene	ND	0.33	ND	0.33	ND	0.33	ND	0.33	1.8	0.33	ND	0.33	44.0	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33
Pentachlorophenol	ND	1.60	ND	1.60	ND	1.60	ND	1.60	ND	1.60	ND	1.60	ND	1.60	ND	1.60	ND	1.60	ND	1.60	ND	1.60
Phenanthrene	1.5	0.33	0.56	0.33	ND	0.33	ND	0.33	42.0	0.33	36.0	0.33	55.0	0.33	ND	0.33	70.0	0.33	ND	0.33	ND	0.33
Phenol	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33
Tetrachlorophenol	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33
2,4,5-Trichlorophenol	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33
2,4,6-Trichlorophenol	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33	ND	0.33

NOTE: DL = Laboratory Detection Limit

All units in mg/kg dw

Historical Soil Sample Parameter Summary Table - Volatiles

HISTORICAL SOIL SAMPLE PARAMETER SUMMARY TABLE
VOLATILES
SOUTHERN WOOD PIEDMONT FACILITY
WILMINGTON, NORTH CAROLINA

	SS-1		SS-2		SS-3		SS-4		SS-5		SS-6		SS-7		SS-8		SS-9		SS-10		SS-11	
VOLATILES	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*
Benzene	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
Bromodichloroethane	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
Bromomethane	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.001
Carbon Tetrachloride	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.005
Chlorobenzene	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
Chloroethane	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.001
2-Chloroethylvinyl Ether	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.005
Chloroform	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
Chloromethane	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.001
Cis-1,3-Dichloropropene	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.005
Dibromochloromethane	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
1,2-Dibromomethane	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.005	ND	0.001	ND	0.005	ND	0.001	ND	0.001
Dichlorodifluoromethane	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005
1,1-Dichloroethane	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.005
1,2-Dichloroethane	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
1,1-Dichloroethene	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
Dichloromethane	0.024	0.001	0.0064	0.001	0.015	0.001	0.017	0.001	0.012	0.001	0.014	0.001	0.059	0.001	0.007	0.001	0.020	0.001	0.008	0.001	0.0068	0.001
1,2-Dichloropropane	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
Ethyl Benzene	ND	0.001	ND	0.001	ND	0.02	ND	0.001	ND	0.001	ND	0.001	0.15	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
Fluorotrichloromethane	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.001
M/P-Xylene	0.0025	0.001	ND	0.001	ND	0.02	0.001	0.001	0.0011	0.001	0.0014	0.001	0.084	0.001	ND	0.001	0.0071	0.001	ND	0.001	ND	0.005
Methyl-T-Butyl Ether (Mtbe)	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.001
o-Xylene	0.0011	0.001	ND	0.001	ND	0.02	ND	0.001	ND	0.001	ND	0.001	0.069	0.001	ND	0.001	0.0075	0.001	ND	0.001	ND	0.005
1,1,2,2-Tetrachloroethane	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
Toluene	0.0024	0.001	ND	0.001	ND	0.001	ND	0.001	0.0013	0.001	0.0034	0.001	0.016	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
Trans-1,2-Dichloroethylene	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
1,1,1-Trichloroethane	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
1,1,2-Trichloroethane	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
Trichloroethene	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
Vinyl Chloride	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005

NOTE: DL = Laboratory Detection Limit

All units in mg/kg dw

Historical Groundwater Sample Parameter Summary Table - Metals

HISTORICAL GROUNDWATER SAMPLE PARAMETER SUMMARY TABLE
METALS
SOUTHERN WOOD PIEDMONT FACILITY
WILMINGTON, NORTH CAROLINA

	B-2		B-3		B-4		B-5		B-6		MW-6			
	3/92		3/92		3/92		3/92		3/92		3/92		10/92	
METALS	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*
Arsenic (Total)	0.11	0.025	0.049	0.005	0.031	0.025	ND	0.005	0.051	0.025	ND	0.005	ND	0.005
Arsenic (Dissolved)	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005
Chromium (Total)	0.10	0.006	0.095	0.006	0.19	0.006	0.006	0.006	0.066	0.006	ND	0.006	ND	0.01
Chromium (Dissolved)	ND	0.006	ND	0.006	ND	0.006	ND	0.006	ND	0.006	ND	0.006	ND	0.01
Copper (Total)	0.05	0.006	0.085	0.006	0.13	0.006	0.014	0.006	0.056	0.006	0.012	0.006	ND	0.025
Copper (Dissolved)	ND	0.006	ND	0.006	ND	0.006	0.0064	0.006	ND	0.006	ND	0.006	ND	0.025
Lead (Total)	0.35	0.25	0.12	0.025	0.21	0.05	0.01	0.005	0.1	0.05	0.0092	0.005	ND	0.005
Lead (Dissolved)	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005

	MW-7				MW-8				MW-8A		MW-9			
	3/92		10/92		3/92		10/92		10/92		3/92		10/92	
METALS	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*
Arsenic (Total)	0.0062	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005
Arsenic (Dissolved)	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005
Chromium (Total)	0.031	0.006	0.014	0.01	0.015	0.006	0.024	0.01	ND	0.01	ND	0.006	ND	0.01
Chromium (Dissolved)	ND	0.006	ND	0.01	ND	0.006	ND	0.01	ND	0.01	ND	0.006	ND	0.01
Copper (Total)	0.012	0.006	ND	0.025	0.012	0.006	0.026	0.025	ND	0.025	0.007	0.006	ND	0.025
Copper (Dissolved)	ND	0.006	ND	0.025	ND	0.006	ND	0.025	ND	0.025	ND	0.006	ND	0.025
Lead (Total)	0.023	0.005	0.0097	0.005	0.016	0.005	0.038	0.01	ND	0.005	ND	0.005	ND	0.005
Lead (Dissolved)	ND	0.005	ND	0.005	ND	0.005	ND	0.01	ND	0.005	ND	0.005	ND	0.005

	MW-10				MW-11A		MW-13				MW-14			
	3/92		10/92		10/92		3/92		10/92		3/92		10/92	
METALS	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL	RESULT	DL*	RESULT	DL*	RESULT	DL*
Arsenic (Total)	0.077	0.05	0.048	0.005	ND	0.005	0.05	0.025	0.048	0.005	0.01	0.005	0.018	0.005
Arsenic (Dissolved)	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005
Chromium (Total)	0.059	0.006	0.019	0.01	0.012	0.01	0.059	0.006	0.039	0.01	0.033	0.006	0.069	0.01
Chromium (Dissolved)	ND	0.006	ND	0.01	ND	0.01	ND	0.006	ND	0.01	ND	0.006	ND	0.01
Copper (Total)	0.091	0.006	ND	0.025	ND	0.025	0.08	0.006	0.061	0.025	0.023	0.006	0.059	0.025
Copper (Dissolved)	ND	0.006	ND	0.025	ND	0.025	ND	0.006	ND	0.025	ND	0.006	ND	0.025
Lead (Total)	0.084	0.05	0.018	0.005	0.0095	0.005	0.14	0.05	0.120	0.05	0.029	0.01	0.05	0.015
Lead (Dissolved)	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.05	ND	0.005	ND	0.015

	MW-15				MW-16				MW-17				MW-18	
	3/92		10/92		3/92		10/92		3/92		10/92		10/92	
METALS	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*
Arsenic (Total)	0.10	0.05	0.110	0.05	0.027	0.005	ND	0.005	0.14	0.05	0.04	0.005	0.0058	0.005
Arsenic (Dissolved)	ND	0.005	0.023	0.05	ND	0.005	ND	0.005	ND	0.005	0.0057	0.005	ND	0.005
Chromium (Total)	0.051	0.006	0.031	0.01	0.120	0.006	ND	0.01	0.18	0.006	0.035	0.01	0.67	0.01
Chromium (Dissolved)	ND	0.006	ND	0.01	ND	0.006	ND	0.01	ND	0.006	ND	0.01	ND	0.01
Copper (Total)	0.086	0.006	0.05	0.025	0.14	0.006	0.03	0.025	0.40	0.006	0.054	0.025	0.051	0.025
Copper (Dissolved)	ND	0.006	ND	0.025	ND	0.006	ND	0.025	ND	0.006	ND	0.025	ND	0.025
Lead (Total)	0.094	0.05	0.042	0.015	0.064	0.025	0.012	0.005	0.39	0.25	0.045	0.01	0.081	0.05
Lead (Dissolved)	ND	0.005	ND	0.015	ND	0.005	ND	0.005	ND	0.005	ND	0.01	ND	0.05

	MW-19		MW-19A		MW-20		MW-21		MW-22		MW-23		MW-24		MW-25	
	10/92		10/92		10/92		10/92		10/92		10/92		10/92		10/92	
METALS	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*
Arsenic (Total)	ND	0.005	0.005	0.005	0.01	0.005	0.026	0.005	0.033	0.005	ND	0.005	0.0064	0.005	0.012	0.005
Arsenic (Dissolved)	ND	0.005	ND	0.005	ND	0.005	ND	0.005	0.013	0.005	ND	0.005	ND	0.005	ND	0.005
Chromium (Total)	0.03	0.01	0.011	0.01	ND	0.01	0.032	0.01	0.200	0.01	ND	0.01	0.018	0.01	0.031	0.01
Chromium (Dissolved)	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
Copper (Total)	ND	0.025	ND	0.025	0.032	0.025	0.035	0.025	0.038	0.025	ND	0.025	0.027	0.025	0.041	0.025
Copper (Dissolved)	ND	0.025	ND	0.025	ND	0.025	ND	0.025	ND	0.025	ND	0.025	ND	0.025	ND	0.025
Lead (Total)	0.005	0.005	0.011	0.005	0.012	0.005	0.061	0.05	0.037	0.01	ND	0.005	0.071	0.05	0.036	0.01
Lead (Dissolved)	ND	0.005	ND	0.005	ND	0.005	ND	0.05	ND	0.01	ND	0.005	ND	0.05	ND	0.01

NOTE: DL = Laboratory Detection Limit
All units in mg/l

Historical Groundwater Sample Parameter Summary Table - Semi-Volatiles

HISTORICAL GROUNDWATER SAMPLE PARAMETER SUMMARY TABLE
SEMI–VOLATILES
SOUTHERN WOOD PIEDMONT FACILITY
WILMINGTON, NORTH CAROLINA

	B–2		B–3		B–4		B–5		B–6		MW–6				MW–7				MW–8				MW–8A	
	3/92		3/92		3/92		3/92		3/92		3/92		10/92		3/92		10/92		3/92		10/92		10/92	
SEMI–VOLATILES	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*
Acenaphthene	ND	0.01	ND	0.01	3.0	0.01	ND	0.01	0.022	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
Anthracene	ND	0.01	ND	0.01	0.94	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
Benzo(a)Anthracene	ND	0.01	ND	0.01	0.42	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
Benzo(a)Pyrene	ND	0.01	ND	0.01	0.11	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
Benzo(b)Fluoranthene	ND	0.01	ND	0.01	0.21	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
Benzo(k)Fluoranthene	ND	0.01	ND	0.01	0.056	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
Bis(2–Chloroethyl)Ether	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
Carbazole	ND	0.01	ND	0.01	0.36	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
4–Chloro–3–Methylphenol	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
2–Chlorophenol	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
Chrysene	ND	0.01	ND	0.01	0.34	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
Dibenzo(a,h)Anthracene	ND	0.01	ND	0.01	0.011	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
2,4–Dimethylphenol	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
2,4–Dinitrophenol	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05
Fluoranthene	ND	0.01	ND	0.01	2.7	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
Indeno(1,2,3–cd)Pyrene	ND	0.01	ND	0.01	0.035	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
Naphthalene	ND	0.01	ND	0.01	14.0	0.01	ND	0.01	0.052	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
Pentachlorophenol	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05
Phenanthrene	ND	0.01	ND	0.01	5.8	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
Phenol	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
Tetrachlorophenol	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
2,4,5–Trichlorophenol	ND	0.01	ND	0.01	ND	0.01	ND	0.05	ND	0.05	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
2,4,6–Trichlorophenol	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01

NOTE: DL = Laboratory Detection Limit

All units in mg/l

HISTORICAL GROUNDWATER SAMPLE PARAMETER SUMMARY TABLE
SEMI-VOLATILES
SOUTHERN WOOD PIEDMONT FACILITY
WILMINGTON, NORTH CAROLINA

	MW-9				MW-10				MW-11A		MW-13				MW-14				MW-15				MW-16			
	3/92		10/92		3/92		10/92		10/92		3/92		10/92		3/92		10/92		3/92		10/92		3/92		10/92	
SEMI-VOLATILES	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*
Acenaphthene	ND	0.01	ND	0.01	ND	0.01	ND	0.01	0.05	0.001	1.1	0.01	1.10	0.2	0.74	0.01	0.81	0.01	0.15	0.01	0.14	0.01	ND	0.01	ND	0.01
Anthracene	ND	0.01	ND	0.01	ND	0.01	ND	0.01	0.02	0.001	0.13	0.01	0.26	0.2	0.11	0.01	0.26	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
Benzo(a)Anthracene	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.005	0.057	0.01	0.12	0.01	0.037	0.01	0.14	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
Benzo(a)Pyrene	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.001	0.02	0.01	0.04	0.01	0.011	0.01	0.05	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
Benzo(b)Fluoranthene	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.001	0.037	0.01	0.08	0.01	0.021	0.01	0.11	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
Benzo(k)Fluoranthene	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.005	0.01	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
Bis(2-Chloroethyl)Ether	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.001	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
Carbazole	ND	0.01	ND	0.01	ND	0.01	ND	0.01	0.04	0.001	0.067	0.01	0.32	0.2	0.11	0.01	0.19	0.01	0.021	0.01	0.03	0.01	ND	0.01	ND	0.01
4-Chloro-3-Methylphenol	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.005	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
2-Chlorophenol	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.001	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
Chrysene	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.001	0.057	0.01	0.10	0.01	0.036	0.01	0.09	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
Dibenzo(a,h)Anthracene	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.005	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
2,4-Dimethylphenol	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.005	0.063	0.01	0.01	0.01	0.37	0.1	ND	0.01	0.044	0.01	0.03	0.01	ND	0.01	ND	0.01
2,4-Dinitrophenol	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.001	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05
Fluoranthene	ND	0.01	ND	0.01	ND	0.01	ND	0.01	0.01	0.001	0.56	0.01	0.78	0.2	0.38	0.01	0.78	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
Indeno(1,2,3-cd)Pyrene	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.001	ND	0.01	0.02	0.01	ND	0.01	0.02	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
Naphthalene	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.001	2.8	0.01	3.50	0.2	3.1	0.01	4.90	0.01	0.11	0.01	ND	0.01	ND	0.01	ND	0.01
Pentachlorophenol	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.001	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05
Phenanthrene	ND	0.01	ND	0.01	ND	0.01	ND	0.01	0.06	0.001	1.2	0.01	1.60	0.2	1.1	0.01	1.40	0.01	0.023	0.01	0.05	0.01	ND	0.01	ND	0.01
Phenol	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.005	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
Tetrachlorophenol	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.001	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
2,4,5-Trichlorophenol	ND	0.05	ND	0.01	ND	0.05	ND	0.01	ND	0.005	ND	0.01	ND	0.01	ND	0.05	ND	0.01	ND	0.05	ND	0.01	ND	0.05	ND	0.01
2,4,6-Trichlorophenol	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.001	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01

NOTE: DL = Laboratory Detection Limit

All units in mg/l

HISTORICAL GROUNDWATER SAMPLE PARAMETER SUMMARY TABLE
SEMI-VOLATILES
SOUTHERN WOOD PIEDMONT FACILITY
WILMINGTON, NORTH CAROLINA

	MW-17				MW-18		MW-19		MW-19A		MW-20		MW-21		MW-22		MW-23		MW-24		MW-25	
	3/92		10/92		10/92		10/92		10/92		10/92		10/92		10/92		10/92		10/92		10/92	
SEMI-VOLATILES	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*
Acenaphthene	0.024	0.01	ND	0.01	ND	0.01	0.18	0.01	ND	0.01	0.05	0.01	ND	0.01	2.50	0.01	ND	0.01	0.11	0.01	0.12	0.01
Anthracene	0.023	0.01	0.02	0.01	ND	0.01	0.01	0.01	ND	0.01	ND	0.01	ND	0.01	0.18	0.01	ND	0.01	ND	0.01	0.07	0.01
Benzo(a)Anthracene	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	0.13	0.01	ND	0.01	ND	0.01	0.05	0.01
Benzo(a)Pyrene	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	0.06	0.01	ND	0.01	ND	0.01	0.02	0.01
Benzo(b)Fluoranthene	ND	0.01	0.01	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	0.12	0.01	ND	0.01	ND	0.01	0.04	0.01
Benzo(k)Fluoranthene	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
Bis(2-Chloroethyl)Ether	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
Carbazole	ND	0.01	ND	0.01	ND	0.01	0.07	0.01	ND	0.01	ND	0.01	ND	0.01	0.19	0.01	ND	0.01	0.03	0.01	0.02	0.01
4-Chloro-3-Methylphenol	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
2-Chlorophenol	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
Chrysene	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	0.10	0.01	ND	0.01	ND	0.01	0.04	0.01
Dibenzo(a,h)Anthracene	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
2,4-Dimethylphenol	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	0.03	0.01	ND	0.01	ND	0.01	ND	0.01
2,4-Dinitrophenol	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05
Fluoranthene	0.065	0.01	0.08	0.01	ND	0.01	0.02	0.01	ND	0.01	0.012	0.01	ND	0.01	1.70	0.01	ND	0.01	ND	0.01	0.16	0.01
Indeno(1,2,3-cd)Pyrene	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	0.02	0.01	ND	0.01	ND	0.01	ND	0.01
Naphthalene	ND	0.01	ND	0.01	ND	0.01	0.30	0.1	ND	0.01	0.04	0.01	ND	0.01	4.50	0.01	ND	0.01	ND	0.01	ND	0.01
Pentachlorophenol	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.05
Phenanthrene	0.06	0.01	0.06	0.01	ND	0.01	0.08	0.01	ND	0.01	0.05	0.01	ND	0.01	3.70	0.01	ND	0.01	0.02	0.01	0.19	0.01
Phenol	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
Tetrachlorophenol	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
2,4,5-Trichlorophenol	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01
2,4,6-Trichlorophenol	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01

NOTE: DL = Laboratory Detection Limit

All units in mg/l

Historical Groundwater Sample Parameter Summary Table - Volatiles

HISTORICAL GROUNDWATER SAMPLE PARAMETER SUMMARY TABLE
VOLATILES
SOUTHERN WOOD PIEDMONT FACILITY
WILMINGTON, NORTH CAROLINA

	B-2		B-3		B-4		B-5		B-6		MW-6				MW-7				MW-8				MW-8A	
	3/92		3/92		3/92		3/92		3/92		3/92		10/92		3/92		10/92		3/92		10/92		10/92	
VOLATILES	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*
Benzene	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
Bromodichloroethane	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
Bromomethane	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.001	ND	0.005
Carbon Tetrachloride	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.005	ND	0.001
Chlorobenzene	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
Chloroethane	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.001	ND	0.005
2-Chloroethylvinyl Ether	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.005	ND	0.001
Chloroform	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	0.002	0.001
Chloromethane	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.001	ND	0.005
Cis-1,3-Dichloropropene	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.005	ND	0.001
Dibromochloromethane	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
1,2-Dibromomethane	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.005	ND	0.001	ND	0.005	ND	0.001	ND	0.001	ND	0.005
Dichlorodifluoromethane	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.001
1,1-Dichloroethane	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.005	ND	0.001
1,2-Dichloroethane	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
1,1-Dichloroethene	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
Dichloromethane	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	0.002	0.001	ND	0.001
1,2-Dichloropropane	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
Ethyl Benzene	ND	0.001	ND	0.001	0.110	0.02	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
Fluorotrichloromethane	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.001	ND	0.005
M/P-Xylene	ND	0.001	ND	0.001	0.09	0.02	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.005	ND	0.001
Methyl-T-Butyl Ether (Mtbe)	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.001	ND	0.005
o-Xylene	ND	0.001	ND	0.001	0.04	0.02	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.005	ND	0.001
1,1,2,2-Tetrachloroethane	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
Tetrachloroethene	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001			ND	0.001			ND	0.001				
Toluene	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
Trans-1,2-Dichloroethylene	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
1,1,1-Trichloroethane	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
1,1,2-Trichloroethane	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
Trichloroethene	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
Vinyl Chloride	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005

NOTE: DL = Laboratory Detection Limit

All units in mg/l

HISTORICAL GROUNDWATER SAMPLE PARAMETER SUMMARY TABLE
VOLATILES
SOUTHERN WOOD PIEDMONT FACILITY
WILMINGTON, NORTH CAROLINA

	MW-9				MW-10				MW-11A		MW-13				MW-14				MW-15				MW-16			
	3/92		10/92		3/92		10/92		10/92		3/92		10/92		3/92		10/92		3/92		10/92		3/92		10/92	
VOLATILES	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*
Benzene	ND	0.001	ND	0.001	ND	0.001	ND	0.001	0.003	0.001	0.073	0.01	0.1	0.01	0.03	0.01	0.019	0.005	ND	0.005	0.005	0.001	ND	0.001	ND	0.001
Bromodichloroethane	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.01	ND	0.001	ND	0.005	ND	0.005	ND	0.001	ND	0.001	ND	0.001
Bromomethane	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.05	ND	0.005	ND	0.025	ND	0.025	ND	0.005	ND	0.005	ND	0.005
Carbon Tetrachloride	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.01	ND	0.001	ND	0.005	ND	0.005	ND	0.001	ND	0.001	ND	0.001
Chlorobenzene	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.01	ND	0.001	ND	0.005	ND	0.005	ND	0.001	ND	0.001	ND	0.001
Chloroethane	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.05	ND	0.005	ND	0.025	ND	0.025	ND	0.005	ND	0.005	ND	0.005
2-Chloroethylvinyl Ether	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.01	ND	0.001	ND	0.005	ND	0.005	ND	0.001	ND	0.001	ND	0.001
Chloroform	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.01	0.0011	0.001	ND	0.005	ND	0.005	ND	0.001	ND	0.001	ND	0.001
Chloromethane	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.05	ND	0.005	ND	0.025	ND	0.025	ND	0.005	ND	0.005	ND	0.005
Cis-1,3-Dichloropropene	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.01	ND	0.001	ND	0.005	ND	0.005	ND	0.001	ND	0.001	ND	0.001
Dibromochloromethane	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.01	ND	0.001	ND	0.005	ND	0.005	ND	0.001	ND	0.001	ND	0.001
1,2-Dibromomethane	ND	0.001	ND	0.005	ND	0.001	ND	0.005	ND	0.005	ND	0.001	ND	0.05	ND	0.001	ND	0.025	ND	0.005	ND	0.005	ND	0.001	ND	0.005
Dichlorodifluoromethane	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.05	ND	0.005	ND	0.025	ND	0.025	ND	0.005	ND	0.005	ND	0.005
1,1-Dichloroethane	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.01	ND	0.001	ND	0.005	ND	0.005	ND	0.001	ND	0.001	ND	0.001
1,2-Dichloroethane	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.005	ND	0.001	ND	0.001	ND	0.001
1,1-Dichloroethene	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.01	ND	0.001	ND	0.005	ND	0.005	ND	0.001	ND	0.001	ND	0.001
Dichloromethane	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.01	ND	0.001	ND	0.005	ND	0.005	ND	0.001	ND	0.001	0.001	0.001
1,2-Dichloropropane	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.01	ND	0.001	ND	0.005	ND	0.005	ND	0.001	ND	0.001	ND	0.001
Ethyl Benzene	ND	0.001	ND	0.001	ND	0.001	ND	0.001	0.004	0.001	0.041	0.01	0.04	0.01	0.067	0.01	0.06	0.005	0.008	0.005	0.008	0.001	0.0027	0.001	ND	0.001
Fluorotrichloromethane	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.05	ND	0.005	ND	0.025	ND	0.025	ND	0.005	ND	0.005	ND	0.005
M/P-Xylene	ND	0.001	ND	0.001	ND	0.001	ND	0.001	0.007	0.001	0.044	0.01	0.05	0.01	0.073	0.01	0.078	0.005	0.008	0.005	0.008	0.001	0.0037	0.001	ND	0.001
Methyl-T-Butyl Ether (Mtbe)	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.05	ND	0.005	ND	0.025	ND	0.025	ND	0.005	ND	0.005	ND	0.005
o-Xylene	ND	0.001	ND	0.001	ND	0.001	ND	0.001	0.003	0.001	0.025	0.01	0.02	0.01	0.036	0.01	0.038	0.005	ND	0.005	0.003	0.001	0.0032	0.001	ND	0.001
1,1,2,2-Tetrachloroethane	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.01	ND	0.001	ND	0.005	ND	0.005	ND	0.001	ND	0.001	ND	0.001
Tetrachloroethene	ND	0.001			ND	0.001					ND	0.001			ND	0.001			ND	0.005			ND	0.001		
Toluene	ND	0.001	ND	0.001	ND	0.001	ND	0.001	0.001	0.001	0.031	0.01	0.01	0.01	0.046	0.01	0.028	0.005	0.006	0.005	ND	0.001	ND	0.001	ND	0.001
Trans-1,2-Dichloroethylene	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.01	ND	0.001	ND	0.005	ND	0.005	ND	0.001	ND	0.001	ND	0.001
1,1,1-Trichloroethane	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.01	ND	0.001	ND	0.005	ND	0.005	ND	0.001	ND	0.001	ND	0.001
1,1,2-Trichloroethane	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.01	ND	0.001	ND	0.005	ND	0.005	ND	0.001	ND	0.001	ND	0.001
Trichloroethene	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.01	ND	0.001	ND	0.005	ND	0.005	ND	0.001	ND	0.001	ND	0.001
Vinyl Chloride	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.05	ND	0.005	ND	0.025	ND	0.025	ND	0.005	ND	0.005	ND	0.005

NOTE: DL = Laboratory Detection Limit

All units in mg/l

HISTORICAL GROUNDWATER SAMPLE PARAMETER SUMMARY TABLE
VOLATILES
SOUTHERN WOOD PIEDMONT FACILITY
WILMINGTON, NORTH CAROLINA

	MW-17				MW-18		MW-19		MW-19A		MW-20		MW-21		MW-22		MW-23		MW-24		MW-25	
	3/92		10/92		10/92		10/92		10/92		10/92		10/92		10/92		10/92		10/92		10/92	
VOLATILES	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*
Benzene	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	0.005	0.001	ND	0.001	ND	0.001	ND	0.001
Bromodichloroethane	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
Bromomethane	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005
Carbon Tetrachloride	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
Chlorobenzene	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
Chloroethane	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005
2-Chloroethylvinyl Ether	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
Chloroform	ND	0.001	ND	0.001	ND	0.001	ND	0.001	0.001	0.001	ND	0.001	0.001	0.001	0.004	0.001	ND	0.001	ND	0.001	ND	0.001
Chloromethane	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005
Cis-1,3-Dichloropropene	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
Dibromochloromethane	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
1,2-Dibromomethane	ND	0.001	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005
Dichlorodifluoromethane	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005
1,1-Dichloroethane	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
1,2-Dichloroethane	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
1,1-Dichloroethene	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
Dichloromethane	ND	0.001	0.003	0.001	0.002	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	0.002	0.001	0.003	0.001	ND	0.001	ND	0.001
1,2-Dichloropropane	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
Ethyl Benzene	0.0039	0.001	0.006	0.001	ND	0.001	0.011	0.001	ND	0.001	ND	0.001	ND	0.001	0.037	0.001	ND	0.001	0.002	0.001	ND	0.001
Fluorotrichloromethane	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005
M/P-Xylene	0.0058	0.001	0.016	0.001	ND	0.001	0.007	0.001	ND	0.001	ND	0.001	ND	0.001	0.048	0.001	ND	0.001	0.002	0.001	ND	0.001
Methyl-T-Butyl Ether(Mtbe)	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005
o-Xylene	0.0046	0.001	0.01	0.001	ND	0.001	0.005	0.001	ND	0.001	ND	0.001	ND	0.001	0.023	0.001	ND	0.001	0.001	0.001	ND	0.001
1,1,2,2-Tetrachloroethane	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
Tetrachloroethene	ND	0.001																				
Toluene	0.0011	0.001	0.017	0.001	ND	0.001	0.001	0.001	ND	0.001	ND	0.001	ND	0.001	0.011	0.001	ND	0.001	ND	0.001	ND	0.001
Trans-1,2-Dichloroethylene	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
1,1,1-Trichloroethane	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
1,1,2-Trichloroethane	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
Trichloroethene	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001	ND	0.001
Vinyl Chloride	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005	ND	0.005

NOTE: DL = Laboratory Detection Limit

All units in mg/l

Historical Surface Water Sample Parameter Summary Table - Semi-Volatile and Metals

HISTORICAL SURFACE WATER SAMPLE PARAMETER SUMMARY TABLE
SEMI-VOLATILES AND METALS
SOUTHERN WOOD PIEDMONT FACILITY
WILMINGTON, NORTH CAROLINA

	U.S. HIGHWAY #74 BRIDGE																											
	12/85		6/86		1/87		7/87		1/88		6/88		1/89		6/89		1/90		7/90		12/91		6/92		1/93		7/93	
SEMI-VOLATILES	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*
Acenaphthene	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Acenaphthylene	NA	--	NA	--	NA	--	NA	--	NA	--	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Anthracene	ND	0.01	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Benzo(a)Anthracene	ND	0.01	ND	0.03	ND	0.03	ND	0.03	ND	0.03	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Benzo(a)Pyrene	ND	0.01	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Benzo(b,k)Fluoranthene	ND	0.01	ND	0.03	ND	0.03	ND	0.03	ND	0.03	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Carbazole	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
2-Chlorophenol	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Chrysene	ND	0.01	ND	0.03	ND	0.03	ND	0.03	ND	0.03	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Dibenzo(a,h)Anthracene	ND	0.02	ND	0.03	ND	0.03	ND	0.03	ND	0.03	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
2,4-Dimethylphenol	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
2,4-Dinitrophenol	ND	0.02	ND	0.03	ND	0.03	ND	0.03	ND	0.03	ND	0.05	ND	0.05	ND	0.050	ND	0.05	ND	0.050	ND	0.050	ND	0.050	ND	0.050	ND	0.050
Fluoranthene	ND	0.01	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Indeno(1,2,3-cd)pyrene	ND	0.02	ND	0.03	ND	0.03	ND	0.03	ND	0.03	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Nephthalene	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
p-chloro-m-cresol	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Pentachlorophenol	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.050	ND	0.05	ND	0.050	ND	0.050	ND	0.050	ND	0.050	ND	0.050
Phenanthrene	ND	0.01	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Phenol	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Tetrachlorophenols	ND	0.01	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.050	ND	0.050	ND	0.050
Trichlorophenols	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
METALS																												
Arsenic	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	--	ND	0.010	ND	0.010	ND	0.010
Chromium	ND	0.01	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	--	ND	0.010	ND	0.010	ND	0.010
Copper	ND	0.01	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.025	ND	--	ND	0.025	ND	0.025	ND	0.025

NOTE: R* = Laboratory Result
DL* = Detection Limit
ND = Below Laboratory Detection Limit
NA = Not Analyzed
All units in mg/l

HISTORICAL SURFACE WATER SAMPLE PARAMETER SUMMARY TABLE
SEMI-VOLATILES AND METALS
SOUTHERN WOOD PIEDMONT FACILITY
WILMINGTON, NORTH CAROLINA

	OLD SLIP																											
	12/85		6/86		1/87		7/87		1/88		6/88		1/89		6/89		1/90		7/90		12/91		6/92		1/93		7/93	
SEMI-VOLATILES	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*
Acenaphthene	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Acenaphthylene	NA	--	NA	--	NA	--	NA	--	NA	--	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Anthracene	ND	0.01	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Benzo(a)Anthracene	ND	0.01	ND	0.03	ND	0.03	ND	0.03	ND	0.03	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Benzo(a)Pyrene	ND	0.01	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Benzo(b,k)Fluoranthene	ND	0.01	ND	0.03	ND	0.03	ND	0.03	ND	0.03	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Carbazole	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
2-Chlorophenol	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Chrysene	ND	0.01	ND	0.03	ND	0.03	ND	0.03	ND	0.03	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Dibenzo(a,h)Anthracene	ND	0.02	ND	0.03	ND	0.03	ND	0.03	ND	0.03	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
2,4-Dimethylphenol	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
2,4-Dinitrophenol	ND	0.02	ND	0.03	ND	0.03	ND	0.03	ND	0.03	ND	0.05	ND	0.05	ND	0.050	ND	0.05	ND	0.050	ND	0.050	ND	0.050	ND	0.050	ND	0.050
Fluoranthene	ND	0.01	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Indeno(1,2,3-cd)pyrene	ND	0.02	ND	0.03	ND	0.03	ND	0.03	ND	0.03	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Naphthalene	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
p-chloro-m-cresol	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Pentachlorophenol	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.050	ND	0.05	ND	0.050	ND	0.050	ND	0.050	ND	0.050	ND	0.050
Phenanthrene	ND	0.01	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Phenol	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Tetrachlorophenols	ND	0.01	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.050	ND	0.050	ND	0.050
Trichlorophenols	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
METALS																												
Arsenic	ND	0.01	NA	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	--	ND	0.010	ND	0.010	ND	0.010
Chromium	ND	0.01	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.01	ND	0.010	ND	0.010	ND	0.010	0.011	0.010	ND	--	ND	0.010	ND	0.010	ND	0.010
Copper	ND	0.01	ND	0.05	ND	0.05	ND	0.05	ND	0.05	0.02	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.025	ND	--	ND	0.025	ND	0.025	ND	0.025

NOTE: R* = Laboratory Result
DL* = Detection Limit
ND = Below Laboratory Detection Limit
NA = Not Analyzed
All units in mg/l

HISTORICAL SURFACE WATER SAMPLE PARAMETER SUMMARY TABLE
SEMI-VOLATILES AND METALS
SOUTHERN WOOD PIEDMONT FACILITY
WILMINGTON, NORTH CAROLINA

	GREENFIELD CREEK																													
	12/85		6/86		1/87		7/87		1/88		6/88		1/89		6/89		7/89		1/90		7/90		12/91		6/92		1/93		7/93	
SEMI-VOLATILES	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*
Acenaphthene	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.010	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Acenaphthylene	NA	--	NA	--	NA	--	NA	--	NA	--	ND	0.01	ND	0.01	ND	0.010	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Anthracene	ND	0.01	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.01	ND	0.01	ND	0.010	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Benzo(a)Anthracene	ND	0.01	ND	0.03	ND	0.03	ND	0.03	ND	0.03	ND	0.01	ND	0.01	ND	0.010	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Benzo(a)Pyrene	ND	0.01	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.01	ND	0.01	ND	0.010	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Benzo(b,k)Fluoranthene	ND	0.01	ND	0.03	ND	0.03	ND	0.03	ND	0.03	ND	0.01	ND	0.01	ND	0.010	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Carbazole	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.010	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
2-Chlorophenol	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.010	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Chrysene	ND	0.01	ND	0.03	ND	0.03	ND	0.03	ND	0.03	ND	0.01	ND	0.01	ND	0.010	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Dibenzo(a,h)Anthracene	ND	0.02	ND	0.03	ND	0.03	ND	0.03	ND	0.03	ND	0.01	ND	0.01	ND	0.010	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
2,4-Dimethylphenol	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.010	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
2,4-Dinitrophenol	ND	0.02	ND	0.03	ND	0.03	ND	0.03	ND	0.03	ND	0.05	ND	0.05	ND	0.050	ND	0.050	ND	0.05	ND	0.050	ND	0.050	ND	0.050	ND	0.050	ND	0.050
Fluoranthene	ND	0.01	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.01	ND	0.01	ND	0.010	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Indeno(1,2,3-cd)pyrene	ND	0.02	ND	0.03	ND	0.03	ND	0.03	ND	0.03	ND	0.01	ND	0.01	ND	0.010	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Naphthalene	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	0.050	0.010	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
p-chloro-m-cresol	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.010	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Pentachlorophenol	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.050	ND	0.050	ND	0.05	ND	0.050	ND	0.050	ND	0.050	ND	0.050	ND	0.050
Phenanthrene	ND	0.01	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.01	ND	0.01	ND	0.010	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Phenol	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.010	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Tetrachlorophenols	ND	0.01	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.01	ND	0.01	ND	0.010	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.050	ND	0.050	ND	0.050
Trichlorophenols	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.010	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
METALS																														
Arsenic	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	--	ND	0.010	ND	0.010	ND	0.010
Chromium	ND	0.01	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	0.046	0.010	ND	--	ND	0.010	ND	0.010	ND	0.010
Copper	ND	0.01	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	0.052	0.025	ND	--	ND	0.025	ND	0.025	ND	0.025

NOTE: R* = Laboratory Result
DL* = Detection Limit
ND = Below Laboratory Detection Limit
NA = Not Analyzed
All units in mg/l

HISTORICAL SURFACE WATER SAMPLE PARAMETER SUMMARY TABLE
SEMI-VOLATILES AND METALS
SOUTHERN WOOD PIEDMONT FACILITY
WILMINGTON, NORTH CAROLINA

	STATE PORTS AUTHORITY																											
	12/85		6/86		1/87		7/87		1/88		6/88		1/89		6/89		1/90		7/90		12/91		6/92		1/93		7/93	
SEMI-VOLATILES	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*	R*	DL*
Acenaphthene	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Acenaphthylene	NA	--	NA	--	NA	--	NA	--	NA	--	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Anthracene	ND	0.01	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Benzo(a)Anthracene	ND	0.01	ND	0.03	ND	0.03	ND	0.03	ND	0.03	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Benzo(a)Pyrene	ND	0.01	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Benzo(b,k)Fluoranthene	ND	0.01	ND	0.03	ND	0.03	ND	0.03	ND	0.03	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Carbazole	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
2-Chlorophenol	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Chrysene	ND	0.01	ND	0.03	ND	0.03	ND	0.03	ND	0.03	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Dibenzo(a,h)Anthracene	ND	0.02	ND	0.03	ND	0.03	ND	0.03	ND	0.03	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
2,4-Dimethylphenol	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
2,4-Dinitrophenol	ND	0.02	ND	0.03	ND	0.03	ND	0.03	ND	0.03	ND	0.05	ND	0.05	ND	0.050	ND	0.05	ND	0.050	ND	0.050	ND	0.050	ND	0.050	ND	0.050
Fluoranthene	ND	0.01	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Indeno(1,2,3-cd)pyrene	ND	0.02	ND	0.03	ND	0.03	ND	0.03	ND	0.03	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Naphthalene	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
p-chloro-m-cresol	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Pentachlorophenol	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.050	ND	0.05	ND	0.050	ND	0.050	ND	0.050	ND	0.050	ND	0.050
Phenanthrene	ND	0.01	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Phenol	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Tetrachlorophenols	ND	0.01	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.050	ND	0.050	ND	0.050
Trichlorophenols	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.010	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	0.010
METALS																												
Arsenic	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	--	ND	0.010	ND	0.010	ND	0.010
Chromium	ND	0.01	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.010	ND	--	ND	0.010	ND	0.010	ND	0.010
Copper	ND	0.01	ND	0.05	ND	0.05	ND	0.05	ND	0.05	ND	0.01	ND	0.010	ND	0.010	ND	0.010	ND	0.025	ND	--	ND	0.025	ND	0.025	ND	0.025

NOTE: R* = Laboratory Result
DL* = Detection Limit
ND = Below Laboratory Detection Limit
NA = Not Analyzed
All units in mg/l

ATTACHMENT B

FORM# AB350

WELL ABANDONMENT RECORD

EE, Inc.
A Division of ViroGroup
P.O. Box 1867 • 1445 Pisgah Church Rd. • Lexington, S.C. 29072
(803) 957-6270

1. WELL LOCATION: (Show a sketch of well loaction.)

ABANDONMENT DATE 10-30-93

Nearest Town: WILMINGTON, NORTH CAROLINA

(Road, Community, Subdivision, Lot No.)

County: NEW HANOVER

Quadrangle Name: WILMINGTON

Well No. MW-24

2. OWNER: SOUTHERN WOOD PIEDMONT

3. ADDRESS: FOOT OF GREENFIELD STREET

4. TOPOGRAPHY: draw, slope, hilltop, valley, flat. FLAT

5. USE OF WELL: MONITORING DATE: 10-30-93

6. TOTAL DEPTH: 11.5 DIAMETER: 2"

7. CASING AND SCREEN REMOVED:

	FEET	DIAMETER
PIT CASING:		
WELL CASING:	6.5	2" PVC RISER
WELL SCREEN:	5' STAINLESS STEEL	2" 0.010 SLOT SCREEN

8. SEALING MATERIAL

Neat Cement

bags of cement: 3

gals. of water: 18

Sand Cement

bags of cement:

yds. of sand:

gals. of water:

Other

Type material: BENTONITE

Amount: 15 POUNDS

9. EXPLAIN METHOD OF GROUT PLACEMENT:

OVER REAM AND TREMIE

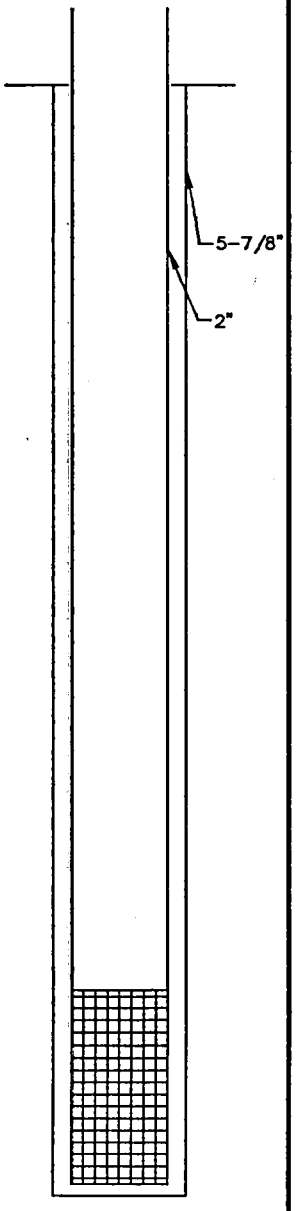
I do hereby certify that this well abandonment record is true and exact.

Signature Gregory B. Kurtz

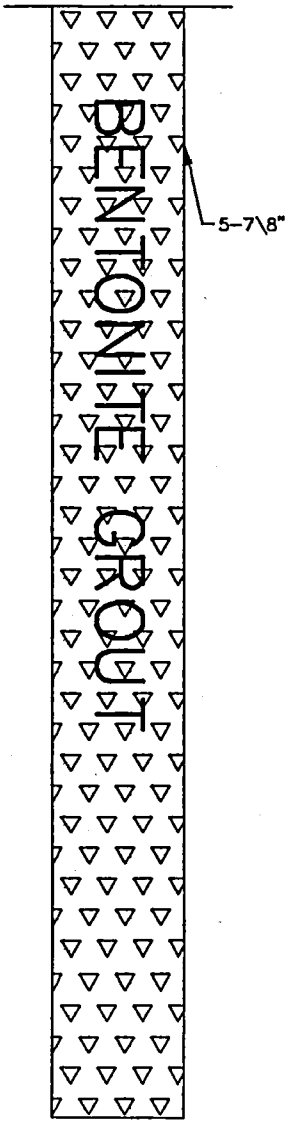
License No. N.C. 1203 Date 10/30/93

WELL DIAGRAM: Draw a detailed sketch of the well showing total depth, diameter and construction details prior to and subsequent to abandonment.

BEFORE



AFTER



ATTACHMENT C

CSX Transportation Right-of-Entry Permit

ViroGroup
Air • Water • Soil
TECHNOLOGY

ETE Division
ViroGroup, Inc.
1445 Pisgah Church Road
Lexington, SC 29072
Phone 803-957-6270
FAX 803-957-3845

October 1, 1993

Mr. H.C. Worsham
Public Project Engineer
CSX Transportation
500 Water Street
Jacksonville, Florida 32202

Re: Right-of-Entry Permit
Wilmington, North Carolina
ViroGroup Project #12-53015.00

Dear Mr. Worsham:

ViroGroup, Inc. - ETE Division is requesting a right-of-entry permit along the Atlantic Coast Line Railroad in Wilmington, North Carolina. The purpose of the permit is to provide access to a parcel of property that cannot be reached by any other means.

Planned activities include the installation of two ground water monitoring wells. These monitoring wells will not be installed within the railroad easement. In order to reach the parcel of land for monitoring well installation, it will be necessary for a rubber tire drill rig to drive along the edge of the railroad for approximately 200 yards. At one point, it will be necessary for the drill rig to drive over the tracks and cross a 10-foot wide trestle. Once across the trestle, the drill rig will leave the tracks and exit the railroad easement for the monitoring well installation. Monitoring well installation may take up to 4 days to complete.

The trestle carries two sets of tracks across a small tidal tributary. The trestle is constructed of closely spaced railroad cross-ties that are continuous across the expanse of the trestle. No 2" x 8" walk boards exist between the tracks at this trestle. ViroGroup, Inc. will utilize blocking to cross the rails.

The section of track that will be accessed is located on Map V11NC Sheet 7A of the Atlantic Coast Line Railroad, Wilmington Terminal, New River Spur. The drill rig will enter the railroad easement at Station 14+00 and travel to 24+00. The drill rig will cross the trestle at Station 23+09.

ViroGroup, Inc. appreciates the railroad's assistance in this matter. Monitoring well installation will occur in late October and early November of 1993. So that well installation can proceed as planned, your expedient attention to this matter would be greatly appreciated. If you have any further questions, or need additional information, please feel free to give us a call at 1-800-786-0654.

Sincerely,

ViroGroup, Inc. - ETE Division

Gregory B. Kuntz

Gregory B. Kuntz, P.G.
Hydrogeologist
NC Reg. #1203

cc: T.M. Davis
Pink Frady

CSX
TRANSPORTATION
P.E. VanCleve, P.E.
Chief Engineer
Design & Construction

Engineering Department
P. O. Box 45052
Jacksonville, FL 32232-5052

October 11, 1993

Mr. Gregory B. Kuntz, P.E.
Hydrogelogist
Viro Group, Inc. - ETE Division
1445 Pisgah Church Road
Lexington, SC 40501

Project: Wilmington, NC - Install Two (2) Ground Water Monitoring Wells.

Dear Mr. Kuntz:

This has reference to your request to enter the property of CSX Transportation, Inc. hereinafter called "Railroad", to perform certain work, hereinafter called "Work", in connection with the construction of the captioned project.

Railroad hereby grants to Viro Group, Inc-ETE Division hereinafter called "Agency", the right and permission to enter upon Railroad's property for the purpose of performing said Work as outlined on Agency's letter or plan, made a part hereof by reference, subject to the terms, conditions and provisions hereinbelow set forth:

1. The work shall be performed at the entire cost and expense of Agency, in accordance with good and sound engineering practices, to the satisfaction of Railroad's Chief Engineer, or his duly authorized representative, and in a manner to avoid accidents and damages or unnecessary delays to or interference with train traffic of Railroad.

2. Agency shall notify Railroad's Division Engineer Representative, Mr. R. A. Martin, telephone (919) 371-6081 at least seventy-two (72) hours before proceeding with the Work Railroad property and shall abide by the instructions of said Division Engineer Representative insofar as the safety of the Railroad is concerned. 371-9925

3. No equipment of Agency or of its contractor, shall be placed and operated, nor Work permitted to be performed at a distance closer than eighteen (18) feet from the center of any track. Equipment shall be moved across the Railroad's track(s) only at a public crossing, unless prior arrangements have been made with said Division Engineer Representative. All precautions must be taken by Agency and its contractor to avoid interference with or damage to Railroad's signal and communications facilities during the course of said Work.

4. Railroad shall furnish such personnel, flagman or watchman which in Railroad's opinion may be necessary to protect the facilities and traffic of Railroad during the performance of Railroad during the performance of said Work and Agency,or its contractor, shall reimburse Railroad promptly for the actual cost of said services, including all applicable surcharges, upon receipt of bill or bills therefor.

5. Agency or its Contractor hereby assumes risk of and agrees to indemnify, defend, protect and save Railroad harmless from and against (a) injury to or death of any person or persons whomsoever, including but not limited to the agents, servants or employees of the parties hereto, or (b) the loss or damage to any property whatsoever, including property owned or in the care, custody or control of Railroad, and (c) all claims, demands, suits, judgments or expenses incurred in connection therewith; resulting from or arising out of the sole or concurring negligent or willful acts or omissions of Agency, or its agents, servants or employees, in the performance or execution of the Work performed under this right-of-entry or incidental thereto.

6. Agency or its Contractor shall carry Public Liability or Commercial General Liability Insurance covering Agency's direct and assumed or contractual liability, including liability assumed under this Right-of-Entry Letter Agreement. Coverage of not less than TWO MILLION DOLLARS ($2,000,000.00) Combined Single Limit per occurrence for personal injury and property damage is recommended to Agency as a prudent minimum to protect Agency in connection with liability assumed hereunder. Agency shall provide a Certificate of Insurance naming Railroad as Certificate Holder, the Certificate of Insurance to be sent to Railroad with return of the signed duplicate original of this right-of-entry letter.

7. Agency or its Contractor hereby agrees to pay Railroad a construction risk fee in the amount of FOUR HUNDRED DOLLARS ($400.00), and is thereby relieved of any obligation to purchase Railroad Protective Insurance for the benefit of Railroad for operations covered by this letter agreement. Agency shall send Railroad its check for the above amount, payable to Railroad, with return of the signed duplicate original of this right-of-entry letter.

8. Agency shall, or shall require its contractor to, promptly notify said Division Engineer Representative of any loss, damage, injury or death arising out or in connection with said Work to be performed.

9. It is understood and agreed that, upon completion of said Work, Railroad's property shall be left in a condition satisfactory to Railroad's Chief Engineer or his duly authorized representative.

10. This right-of-entry and the permission conferred and the license granted by it does not constitute a grant of permanent easement and shall terminate upon completion of the Work or at midnight, March 31 1994, whichever occurs first, unless extended in writing by Railroad.

If the provision and terms of the right-of-entry granted by this letter are acceptable to the Agency, please have an authorized official sign both copies in the space provided below, and return on duplicate original to the undersigned.

Yours very truly,

CSX TRANSPORTATION, INC.

P. E. VanCleve By H. Woodson

P. E. VanCleve

ACCEPTED:

Viro Group, Inc.-ETE Division

By: Gregory B. Tuttle

Title: Hydrogeologist

Date: 10-22-, 1993

ACORD. CERTIFICATE OF INSURANCE

ISSUE DATE (MM/DD/YY) 20-OCT-1993

PRODUCER 1840

Willis Corroon Construction Services Corporation
3333 New Hyde Park Rd.
Suite 300
P.O. Box 5450
New Hyde Park NY 11040
(516) 365-2100
Contact : Mary Ann Reilly

INSURED

ViroGroup, Inc./ETE Division
1445 Pisgah Church Road
Lexington SC 29072

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

COMPANIES AFFORDING COVERAGE

COMPANY LETTER A	Home Ins. Co. of Illinois
COMPANY LETTER B	Lexington Insurance Co.
COMPANY LETTER C	American International Specialty Lines Ins. Co.
COMPANY LETTER D	
COMPANY LETTER E	

COVERAGES

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED, NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES.

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS	
	GENERAL LIABILITY				BODILY INJURY OCC.	$
	X COMPREHENSIVE FORM				BODILY INJURY AGG.	$
	X PREMISES/OPERATIONS				PROPERTY DAMAGE OCC.	$
	X UNDERGROUND EXPLOSION & COLLAPSE HAZARD				PROPERTY DAMAGE AGG.	$
A	X PRODUCTS/COMPLETED OPER.	SLM9261384	01-JUL-1993	01-JUL-1994	BI & PD COMBINED OCC.	$ 1,000,000
	X CONTRACTUAL				BI & PD COMBINED AGG.	$ 2,000,000
	X INDEPENDENT CONTRACTORS				PERSONAL INJURY AGG.	$
	X BROAD FORM PROPERTY DAMAGE					
	PERSONAL INJURY					
	AUTOMOBILE LIABILITY				BODILY INJURY (Per person)	$
	ANY AUTO					
	ALL OWNED AUTOS (Priv. pass.)				BODILY INJURY (Per accident)	$
	ALL OWNED AUTOS (other than priv. pass.)					
	HIRED AUTOS				PROPERTY DAMAGE	$
	NON-OWNED AUTOS					
	GARAGE LIABILITY				BODILY INJURY & PROPERTY DAMAGE COMBINED	$
	EXCESS LIABILITY				EACH OCCURRENCE	$ 4,000,000
B	X UMBRELLA FORM	5107125	01-JUL-1993	01-JUL-1994	AGGREGATE	$ 4,000,000
	OTHER THAN UMBRELLA FORM					
	WORKER'S COMPENSATION AND EMPLOYERS' LIABILITY				STATUTORY LIMITS	
					EACH ACCIDENT	$
					DISEASE-POLICY LIMIT	$
					DISEASE-EACH EMPLOYEE	$
	OTHER				$5,000,000 including	
C	Errors and Omissions	7730242	01-JUL-1993	01-JUL-1994	pollution liability	

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS

As respects Monitoring Well Installation

CERTIFICATE HOLDER

CSX Transportation
H. C. (Clark) Worsham
Public Project Engineer
500 Water Street
Jacksonville FL 32202

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE COMPANY, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE

George J. Ollendike

ACORD CERTIFICATE OF INSURANCE

ISSUE DATE (MM/DD/YY) 10/20/1993

PRODUCER

Poe & Brown, Inc.
4210 Metro Parkway, Suite 300
Fort Myers, Fl 33916
(813) 278-0278 FAX 278-1994

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

COMPANIES AFFORDING COVERAGE

COMPANY LETTER A

COMPANY LETTER B HARTFORD FIRE INSURANCE CO.

COMPANY LETTER C HARTFORD UNDERWRITERS INS. CO.

COMPANY LETTER D

COMPANY LETTER E

INSURED

VIROGROUP,INC. ETE-DIVISION
P.O.BOX 1867
LEXINGTON, SC 29072

COVERAGES

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS	
	GENERAL LIABILITY				GENERAL AGGREGATE	$
	COMMERCIAL GENERAL LIABILITY				PRODUCTS-COMP/OP AGG.	$
	CLAIMS MADE / OCCUR.				PERSONAL & ADV. INJURY	$
	OWNER'S & CONTRACTOR'S PROT.				EACH OCCURRENCE	$
					FIRE DAMAGE (Any one fire)	$
					MED. EXPENSE (Any one person)	$
	AUTOMOBILE LIABILITY				COMBINED SINGLE LIMIT	$1,000,000.
B	X ANY AUTO	21UENKZ9612	07/01/93	07/01/94	BODILY INJURY (Per person)	$
	ALL OWNED AUTOS					
	SCHEDULED AUTOS				BODILY INJURY (Per accident)	$
	X HIRED AUTOS					
	X NON-OWNED AUTOS				PROPERTY DAMAGE	$
	GARAGE LIABILITY					
	EXCESS LIABILITY				EACH OCCURRENCE	$
	UMBRELLA FORM				AGGREGATE	$
	OTHER THAN UMBRELLA FORM					
	WORKER'S COMPENSATION				X STATUTORY LIMITS	
C	AND	21WBEO9643	01/01/93	01/01/94	EACH ACCIDENT	$1,000,000.
	EMPLOYERS' LIABILITY				DISEASE - POLICY LIMIT	$1,000,000.
					DISEASE - EACH EMPLOYEE	$1,000,000.
	OTHER					
B	CONTR. EQUIP ALL RISK	UNDER BINDER	07/01/93	07/01/94	DEDUCTIBLE	1,000.

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS

30 DAY CANCELLATION FOR WORKERS COMPENSATION.

CERTIFICATE HOLDER

SX TRANSPORTATION INC
C(CLARK) WORSHAM-PUBLIC PROJ ENG
500 WATER STREET
ACKSONVILLE FL 32202

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL ENDEAVOR TO MAIL 10 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE COMPANY, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE

55849

VIROGROUP, INC.
428 PINE ISLAND RD., S.W.
CAPE CORAL, FL 33991

BARNETT BANK
020-001
315 S. CALHOUN ST.
TALLAHASSEE, FL 32301
63-568/631

CHECK DATE	REFERENCE NO.
10-20-93	55849

AMOUNT
400.00

PAY: FOUR HUNDRED DOLLARS ----------

TO: CSX TRANSPORTATION, INC.

VIROGROUP, INC.

R. A. [illegible]

Lee A. Hlozbach III

⑈055849⑈ ⑆063105683⑆ 2000007036⑈

Corps of Engineers Wetland Modification Permit

ViroGroup
Air • Water • Soil
TECHNOLOGY

ETE Division
ViroGroup, Inc.
1445 Pisgah Church Road
Lexington, SC 29072
Phone 803-957-6270
FAX 803-957-3845

November 5, 1993

Mr. Jeff Richter
Department of the Army Corps of Engineers
Wilmington District
P.O. Box 1890
Wilmington, North Carolina 28402-1890

Re: Monitoring Well Installation Notification
Action ID. 199300253 and Nationwide Permit No. 5
(Scientific Measurement Devices)
ViroGroup Project #12-53015.00

Dear Mr. Richter:

As per our conversation on October 22, 1993, ViroGroup, Inc. is providing notification of monitoring well installation within a wetland area adjacent to the Cape Fear River, at the foot of Greenfield Street in Wilmington, North Carolina. In accordance with Nationwide Permit #5 of the United States Army Corps of Engineers' Regulatory Program, Title 33, CFR 330.6 authorization for monitoring well installation is being requested.

In order to install the monitoring well, no excavation or filling of the wetland area or modification to the existing flow system will be required. At the completion of the monitoring well installation a protective casing set in a 2' x 2' x 8" concrete pad will remain within the wetland area.

In order to confirm notification of the monitoring well installation within a wetland area and to ascertain agreement with Nationwide Permit #5 authorization, ViroGroup, Inc. is requesting a written reply from the United States Army Corps of Engineers acknowledging our request.

If ViroGroup, Inc. can provide you with any additional information concerning this monitoring well installation, please feel free to give us a call at 1-800-786-0654. You expedience in this matter will be greatly appreciated.

Sincerely,

ViroGroup, Inc. - ETE Division

Gregory B. Kuntz

Gregory B. Kuntz, P.G.
Hydrogeologist

Andrew M. Wilson

Andy M. Wilson, P.G.
Senior Hydrogeologist

cc: T.M. Davis
Pink Frady

DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
P.O. BOX 1890
WILMINGTON, NORTH CAROLINA 28402-1890

November 30, 1993

IN REPLY REFER TO
Regulatory Branch

Action ID No. 199400253 and Nationwide Permit No. 5 (Scientific Measurement Devices)

ETE Division
Virogroup, Incorporated
Att: Mr. Gregory Kuntz
1445 Pisgah Church Road
Lexington, Kentucky 29072

Dear Mr. Kuntz:

Reference your application of November 10, 1993, for Department of the Army (DA) authorization to install a monitoring well in wetland adjacent the Cape Fear River at the foot of Greenfield Street in Wilmington, New Hanover County, North Carolina.

For the purposes of the Corps of Engineers' Regulatory Program, Title 33, Code of Federal Regulations (CFR), Part 330.6, published in the Federal Register on November 22, 1991, lists nationwide permits. Authorization, pursuant to Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act, was provided for staff gages, tide gages, water recording devices, water quality testing and improvement devices, and similar scientific structures.

Your work is authorized by this nationwide permit provided it is accomplished in strict accordance with the enclosed conditions and provided you receive a Section 401 water quality certification from the North Carolina Division of Environmental Management (NCDEM) and, in the coastal area, a consistency determination from the North Carolina Division of Coastal Management (NCDCM). You should contact Mr. John Dorney, telephone (919) 733-1786, regarding water quality certification, and Mr. Steve Benton, telephone (919) 733-2293, regarding consistency determination. This nationwide permit does not relieve you of the responsibility to obtain other required State or local approval.

This verification will be valid for two years from the date of this letter unless the nationwide authorization is modified, reissued or revoked. Also, this verification will remain valid for the two years if, during that period, the nationwide permit authorization is reissued without modification or the activity complies with any subsequent modification of the nationwide permit authorization. If during the two years, the nationwide permit authorization expires or is suspended or revoked, or is modified, such that the activity would no longer comply with the terms and conditions of the nationwide permit, activities which have commenced (i.e., are under construction) or are under contract to commence in reliance upon the nationwide permit will remain authorized provided the activity is completed within twelve months of the date of the nationwide permit's expiration, modification or revocation, unless discretionary authority has been exercised on a case-by-case basis to modify, suspend or revoke the authorization.

Questions or comments may be addressed to Mr. Jeffrey Richter, Wilmington Area Field Office, Regulatory Branch, telephone (910) 251-4636.

Sincerely,

G. Wayne Wright
Chief, Regulatory Branch

Enclosure

Copies Furnished (without enclosure):

Mr. Steve Benton
North Carolina Department of
Environment, Health and
Natural Resources
Post Office Box 27687
Raleigh, North Carolina 27611-7687

Mr. John Dorney
Division of Environmental Management
North Carolina Department of
Environment, Health and
Natural Resources
Post Office Box 29535
Raleigh, North Carolina 27626-0535

C. Robert Stroud
Wilmington Regional Office
North Carolina Division of
Coastal Management
127 Cardinal Drive Extension
Wilmington, North Carolina 28405

GENERAL CONDITIONS

1. **Navigation.** No activity may cause more than a minimal adverse effect on navigation.

2. **Proper Maintenance.** Any structure or fill authorized shall be properly maintained, including maintenance to ensure public safety.

3. **Erosion and Siltation Controls.** Appropriate erosion and siltation controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills must be permanently stabilized at the earliest practicable date.

4. **Aquatic Life Movements.** No activity may substantially disrupt the movement of those species of aquatic life indigenous to the waterbody, including those species which normally migrate through the area, unless the activity's primary purpose is to impound water.

5. **Equipment.** Heavy equipment working in wetlands must be placed on mats or other measures must be taken to minimize soil disturbance.

6. **Regional and Case-by-case Conditions.** The activity must comply with any regional conditions which may have been added by the Division Engineer and any case specific conditions added by the Corps.

7. **Wild and Scenic Rivers.** No activity may occur in a component of the National Wild and Scenic River System; or in a river officially designated by Congress as a "study river" for possible inclusion in the system, while the river is in an official study status. Information on Wild and Scenic Rivers may be obtained from the National Park Service and the U.S. Forest Service.

8. **Tribal Rights.** No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

9. **Water Quality Certification.** In certain states, an individual state water quality certification must be obtained or waived.

10. **Coastal Zone Management.** In certain states, an individual state coastal zone management consistency concurrence must be obtained or waived.

11. **Endangered Species.** No activity is authorized under any NWP which is likely to jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act, or which is likely to destroy or adversely modify the critical habitat of such species. Non-Federal permittees shall notify the District Engineer if any listed species or critical habitat might be affected or is in the vicinity of the project and shall not begin work on the activity until notified by the District Engineer that the requirements of

the Endangered Species Act have been satisfied and that the activity is authorized. Information on the location of threatened and endangered species can be obtained from the U.S. Fish and Wildlife Service and National Marine Fisheries Service.

12. **Historic Properties.** No activity which may affect Historic Properties listed, or eligible for listing, in the National Register of Historic Places is authorized, until the District Engineer has complied with the provisions of 33 CFR 325, Appendix C. The prospective permittee must notify the District Engineer if the authorized activity may affect any historic properties listed, determined to be eligible, or which the prospective permittee has reason to believe may be eligible for listing on the National Register of Historic Places, and shall not begin the activity until notified by the District Engineer that the requirements of the National Historic Preservation Act have been satisfied and that the activity is authorized. Information on the location and existence of historic resources can be obtained from the State Historic Preservation Office and the National Register of Historic Places (see 33 CFR 330.4(g)).

13. **Notification.**

a. Where required by the terms of the NWP, the prospective permittee must notify the District Engineer as early as possible and shall not begin the activity:

(1) until notified by the District Engineer that the activity may proceed under the NWP with any special conditions imposed by the District or Division Engineer; or

(2) if notified by the District or Division Engineer that an individual permit is required; or

(3) Unless 30 days have passed from the District Engineer's receipt of the notification and the prospective permittee has not received notice from the District or Division Engineer. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

b. The notification must be in writing and include the following information and any required fees:

(1) Name, address and telephone number of the prospective permittee;

(2) Location of the proposed project;

(3) Brief description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause; any other NWP(s), regional general permit(s) or individual permit(s) used or intended to be used to authorize any part of the proposed project or related activity;

(4) Where required by the terms of the NWP, a delineation of affected special aquatic sites, including wetlands; and

(5) A statement that the prospective permittee has contacted;

(a) The USFWS/NMFS regarding the presence of any Federally listed (or proposed for listing) endangered or threatened species or critical habitat in the permit area that may be affected by the proposed project; and any available information provided by those agencies. (The prospective permittee may contact Corps District Offices for USFWS/NMFS agency contacts and list of critical habitat.)

(b) The SHPO regarding the presence of any historic properties in the permit area that may be affected by the proposed project; and the available information, if any provided by that agency.

14. **Water Supply Intakes.** No discharge of dredged or fill material may occur in the proximity of a public water supply intake except where the discharge is repair of the public water supply intake structures or adjacent bank stabilization.

15. **Shellfish Production.** No discharge of dredged or fill material may occur in areas of concentrated shellfish production, unless the discharge is directly related to a shellfish harvest activity authorized by nationwide permit.

16. **Suitable Material.** No discharge of dredged or fill material may consist of unsuitable material (e.g., trash, debris, car bodies, etc.) and material discharged must be free from toxic pollutants in toxic amounts.

17. **Mitigation.** Discharges of dredged or fill material into waters of the United States must be minimized or avoided to the maximum extent practicable at the project site (i.e., on-site), unless the District Engineer has approved a compensation mitigation plan for the specific regulated activity.

18. **Spawning Areas.** Discharges in spawning areas during spawning seasons must be avoided to the maximum extent practicable.

19. **Obstructions of High Flows.** To the maximum extent practicable, discharges must not permanently restrict or impede the passage of normal or expected high flows or cause the relocation of the water (unless the primary purpose of the fill is to impound waters).

20. **Adverse Impacts from Impoundments.** If the discharge creates an impoundment of water, adverse impacts on the aquatic system caused by the accelerated passage of water and/or the restriction of its flow shall be minimized to the maximum extent practicable.

21. **Waterfowl Breeding Areas.** Discharges into breeding areas for migratory waterfowl must be avoided to the maximum extent practicable.

22. **Removal of Temporary Fills.** Any temporary fills must be removed in their entirety and the affected areas returned to their preexisting elevation.

NATIONWIDE CONDITION

A 30-day notification to the District Engineer is required for discharges of 10 to 25 cubic yards for small weirs and flumes.

REGIONAL CONDITION

All weirs and flumes authorized by this nationwide permit must be removed immediately upon the completion of their intended use. Weirs and flumes are not allowed in areas identified by the North Carolina Division of Marine Fisheries (NCDMF) and/or the North Carolina Wildlife Resources Commission (NCWRC) as anadromous fish spawning areas.

STATE CONSISTENCY CONDITION

Should all or part of a proposed activity be located within an Area of Environmental Concern (AEC) as designated by the North Carolina Coastal Resources Commission, a Coastal Area Management Act (CAMA) permit is required from the North Carolina Division of Coastal Management (NCDCM). Should an activity within or potentially affecting an AEC be proposed by a Federal agency, a consistency determination pursuant to 15 CFR 930 must be provided to the NCDCM at least 90 days before the onset of the proposed activity.

GENERAL CERTIFICATION CONDITIONS

a. Established sediment and erosion control practices will be utilized to prevent violations of the appropriate turbidity water quality standard (50 NTU's in streams and rivers not designated as trout waters by the North Carolina Division of Environmental Management (NCDEM), 25 NTU's in all saltwater classes and all lakes and reservoirs and 10 NTU's in trout waters).

b. Measures shall be taken to prevent live or fresh concrete from coming into contact with waters of the State until the concrete has hardened.

ATTACHMENT D

Monitoring Well Log Database

WELL LOG DATABASE
SOUTHERN WOOD PIEDMONT – WILMINGTON, NORTH CAROLINA FACILITY

PLANT	WELL	INST DAT	BORING TERM	SURFACE ELEV	RISER ELEV	BOTTOM ELEV	WELL DEPTH	RISER DEPTH	COORDINATES NORTHING	COORDINATES EASTING
WIL	MW-6	09/05/85	20.00	3.40	5.07	-16.38	19.78	21.45	171759.04	2317555.49
WIL	MW-7	09/06/85	19.80	3.87	6.03	-15.65	19.52	21.68	171516.87	2317057.66
WIL	MW-8	09/09/85	19.20	4.16	6.80	-14.86	19.02	21.66	171308.46	2317048.69
WIL	MW-8A	10/01/92	51.00	4.12	6.43	-26.63	30.75	33.06	171307.81	2317034.99
WIL	MW-9	09/10/85	19.40	4.26	6.43	-14.96	19.22	21.39	171324.83	2317300.56
WIL	MW-10	02/18/92	13.00	3.63	7.41	-6.87	10.50	14.28	171060.33	2317416.43
WIL	MW-11	02/18/92	13.00	4.31	8.02	-6.19	10.50	14.21	170769.34	2317497.46
WIL	MW-11A	10/01/92	50.00	4.10	6.38	-29.79	33.89	36.17	170771.95	2317484.42
WIL	MW-11B	10/31/93	46.00	4.13	6.26	-38.06	42.19	44.32	170762.69	2317489.76
WIL	MW-12	02/18/92	12.00	4.60	8.22	-5.90	10.50	14.12	170782.73	2317389.15
WIL	MW-13	02/18/92	12.00	3.31	6.97	-7.19	10.50	14.16	170721.30	2317066.52
WIL	MW-14	02/19/92	22.00	2.62	6.30	-13.38	16.00	19.68	170565.41	2317675.19
WIL	MW-14A	11/02/93	42.00	2.76	5.05	-28.39	31.15	33.44	170564.17	2317685.19
WIL	MW-15	02/19/92	13.00	3.26	7.07	-7.24	10.50	14.31	170641.86	2317249.76
WIL	MW-16	02/19/92	13.00	3.88	7.69	-6.62	10.50	14.31	170875.45	2317059.82
WIL	MW-17	02/19/92	15.00	3.86	7.65	-6.64	10.50	14.29	170899.08	2317118.35
WIL	MW-18	10/07/92	14.00	4.26	6.61	-6.87	11.13	13.48	171744.30	2317083.05
WIL	MW-19	10/06/92	14.00	3.19	5.44	-9.68	12.87	15.12	170439.85	2317232.30
WIL	MW-19A	10/02/92	43.17	3.15	5.25	-28.02	31.17	33.27	170443.47	2317244.14
WIL	MW-20	10/07/92	14.00	3.17	5.44	-9.13	12.30	14.57	170921.86	2317799.93
WIL	MW-20A	11/08/93	42.00	3.10	5.23	-27.88	30.98	33.11	170913.19	2317797.41
WIL	MW-21	10/07/92	10.00	3.17	5.34	-3.62	6.79	8.96	171260.09	2317881.59
WIL	MW-22	10/07/92	14.00	3.02	5.26	-8.09	11.11	13.35	170728.25	2316945.44
WIL	MW-22A	11/02/93	42.00	3.07	5.32	-28.79	31.86	34.11	170726.23	2316955.36
WIL	MW-23	10/08/92	12.00	2.67	4.96	-6.39	9.06	11.35	170355.68	2316972.19
WIL	MW-24	10/05/92	12.00	3.58	5.79	-8.02	11.06	13.61	170245.75	2317388.60
WIL	MW-24R	11/12/93	14.00	3.77	5.98	-9.63	13.40	15.61	170242.09	2317324.15
WIL	MW-24A	11/01/93	42.00	3.64	5.81	-30.64	34.28	36.45	170240.18	2317313.97
WIL	MW-25	10/08/92	13.00	1.78	4.96	-10.27	12.05	15.23	170374.77	2317662.47
WIL	MW-26	10/05/92	18.00	2.48	4.91	-15.14	17.62	20.05	170529.26	2317951.33
WIL	MW-27	11/13/93	9.00	3.22	5.41	-1.90	5.12	7.31	171848.14	2317846.63
WIL	MW-28	11/10/93	14.00	2.97	5.18	-8.10	11.07	13.28	170473.09	2318157.25
WIL	MW-28A	11/10/93	40.00	3.26	5.47	-22.42	25.68	27.89	170465.44	2318161.94
WIL	MW-29	11/12/93	7.00	3.19	5.32	-4.04	7.23	9.36	169681.45	2317783.77
WIL	MW-29A	11/09/93	40.00	3.15	5.14	-35.83	38.98	40.97	169673.28	2317782.13
WIL	MW-30	11/12/93	10.00	4.07	6.26	-4.95	9.02	11.21	169874.49	2317618.08
WIL	SG*-Cape Fear	10/12/92			5.93	-0.73			171166.75	2316464.93
WIL	SG*-North	10/12/92			6.64	-0.02			171129.56	2318037.12
WIL	SG*-South	11/09/93			2.13	-1.20			170523.78	2318024.91

* SG = Staff Gauge

Boring Logs

ENVIRONMENTAL TECHNOLOGY ENGINEERING, INC.
CONSULTING ENGINEERS, SURVEYORS AND HYDROGEOLOGISTS
HYDROGEOLOGIC SERVICES

TEST BORING LOG

BORING NO. B-2

PROJECT: SOUTHERN WOOD PIEDMONNT – WILMINGTON, NC		SHEET NO. 1 OF 1	
CLIENT: SOUTHERN WOOD PIEDMONT	DATE FINISHED 2-19-92	JOB NO. 530-06-501	
BORING CONTRACTOR: ETE	DRILLER C. AARON	ELEVATION	
RIG USED MOBILE B-57	INSPECTOR K. ANDERSON	DATE STARTED 2-19-92	

WELL CONSTRUCTION	DEPTH FEET	SAMPLE: NUMBER	TYPE	BLOWS PER 6"	CLASSIFICATION	REMARKS
	0					
		1	SS		Medium to coarse brown SAND	Water saturated OVA = 0.0
CLAY / PLUG	5					
SAND PACK / SAND PACK		2	SS		Same as above	No visual contamination OVA = 0.0
	10					
		3	SS		Brown to black PEAT with root fragments	No visual contamination OVA = 2.0
	15					
	20					
	25					
	30					
	35					
	40					
	45					
	50					

H:530501B2

ENVIRONMENTAL TECHNOLOGY ENGINEERING, INC.
CONSULTING ENGINEERS, SURVEYORS AND HYDROGEOLOGISTS
HYDROGEOLOGIC SERVICES

TEST BORING LOG

BORING NO. B-3

PROJECT: SOUTHERN WOOD PIEDMONT – WILMINGTON, NC		SHEET NO. 1 OF 1	
CLIENT: SOUTHERN WOOD PIEDMONT	DATE FINISHED 2-20-92	JOB NO. 530-06-501	
BORING CONTRACTOR: ETE	DRILLER C. AARON	ELEVATION	
RIG USED MOBILE B-57	INSPECTOR K. ANDERSON	DATE STARTED 2-20-92	

WELL CONSTRUCTION	DEPTH FEET	SAMPLE: DISTURBED	SAMPLE: NO.	SAMPLE: TYPE	SAMPLE: BLOWS PER 6"	CLASSIFICATION	REMARKS
	0						
			1	SS		Fine to medium brown SAND with small wood fragments at 4.5 feet	Water saturated OVA = 3.1
	5						
CLAY / PLUG			2	SS		Same as above	No visual contamination OVA = 0.9
SAND PACK / SAND PACK	10						
			3	SS		Dark brown to black PEAT with wood fragments	No visual contamination OVA = 0.8
	15						
	20						
	25						
	30						
	35						
	40						
	45						
	50						

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ENVIRONMENTAL TECHNOLOGY ENGINEERING, INC. CONSULTING ENGINEERS, SURVEYORS AND HYDROGEOLOGISTS HYDROGEOLOGIC SERVICES		TEST BORING LOG BORING NO. B-4
PROJECT: SOUTHERN WOOD PIEDMONT – WILMINGTON, NC		SHEET NO. 1 OF 1
CLIENT: SOUTHERN WOOD PIEDMONT	DATE FINISHED 2-20-92	JOB NO. 530-06-501
BORING CONTRACTOR: ETE	DRILLER C. AARON	ELEVATION
RIG USED MOBILE B-57	INSPECTOR K. ANDERSON	DATE STARTED 2-20-92

WELL CONSTRUCTION	DEPTH FEET	SAMPLE: LITHOLOGY	SAMPLE: No.	SAMPLE: TYPE	SAMPLE: BLOWS PER 6"	CLASSIFICATION	REMARKS
	0						Visual creosote at top of hole
			1	SS		Fine to medium brown SAND with wood fragments	No visual contamination OVA = 1.7
CLAY	5						
PLUG							
SAND PACK			2	SS		Same as above	No visual contamination OVA = 5.1
SAND PACK	10						
			3	SS			Visual creosote in sand above PEAT OVA = 98.9
	15					Dark brown to black PEAT with wood fragments	
	20						
	25						
	30						
	35						
	40						
	45						
	50						

H:530501B4

ENVIRONMENTAL TECHNOLOGY ENGINEERING, INC.
CONSULTING ENGINEERS, SURVEYORS AND HYDROGEOLOGISTS
HYDROGEOLOGIC SERVICES

TEST BORING LOG

BORING NO. B-5

PROJECT: SOUTHERN WOOD PIEDMONT – WILMINGTON, NC		SHEET NO. 1 OF 1	
CLIENT: SOUTHERN WOOD PIEDMONT	DATE FINISHED 2-20-92	JOB NO. 530-06-501	
BORING CONTRACTOR: ETE	DRILLER C. AARON	ELEVATION	
RIG USED MOBILE B-57	INSPECTOR K. ANDERSON	DATE STARTED 2-20-92	

WELL CONSTRUCTION	DEPTH FEET	SAMPLE: LITHOLOGY	No.	TYPE	BLOWS PER 6"	CLASSIFICATION	REMARKS
	0		1	SS		Fine to medium brown SAND	Water saturated No visual contamiation OVA = 54.3
CLAY / PLUG	5						
SAND PACK / SAND PACK			2	SS		Same as above	OVA = 21.7
	10						
			3	SS		Dark black to brown PEAT with wood fragments	No visual contamination OVA = 3.9
	15						
	20						
	25						
	30						
	35						
	40						
	45						
	50						

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CONSULTING ENGINEERS, SURVEYORS AND HYDROGEOLOGISTS
HYDROGEOLOGIC SERVICES

TEST BORING LOG

BORING NO. B-6

PROJECT: SOUTHERN WOOD PIEDMONT – WILMINGTON, NC			SHEET NO. 1 OF 1
CLIENT: SOUTHERN WOOD PIEDMONT	DATE FINISHED	2-20-923	JOB NO. 530-06-501
BORING CONTRACTOR: ETE	DRILLER	C. AARON	ELEVATION
RIG USED MOBILE B-57	INSPECTOR	K. ANDERSON	DATE STARTED 2-20-92

WELL CONSTRUCTION: CLAY; PLUG; SAND PACK; SAND PACK

DEPTH FEET	SAMPLE No.	SAMPLE TYPE	BLOWS PER 6"	CLASSIFICATION	REMARKS
0					
	1	SS		Fine to mdedium brown SAND	Water saturated No visual contamination OVA = 1.7
5					
	2	SS		Dark brown to black PEAT with wood fragments	OVA = 1.0
10					
15					
20					
25					
30					
35					
40					
45					
50					

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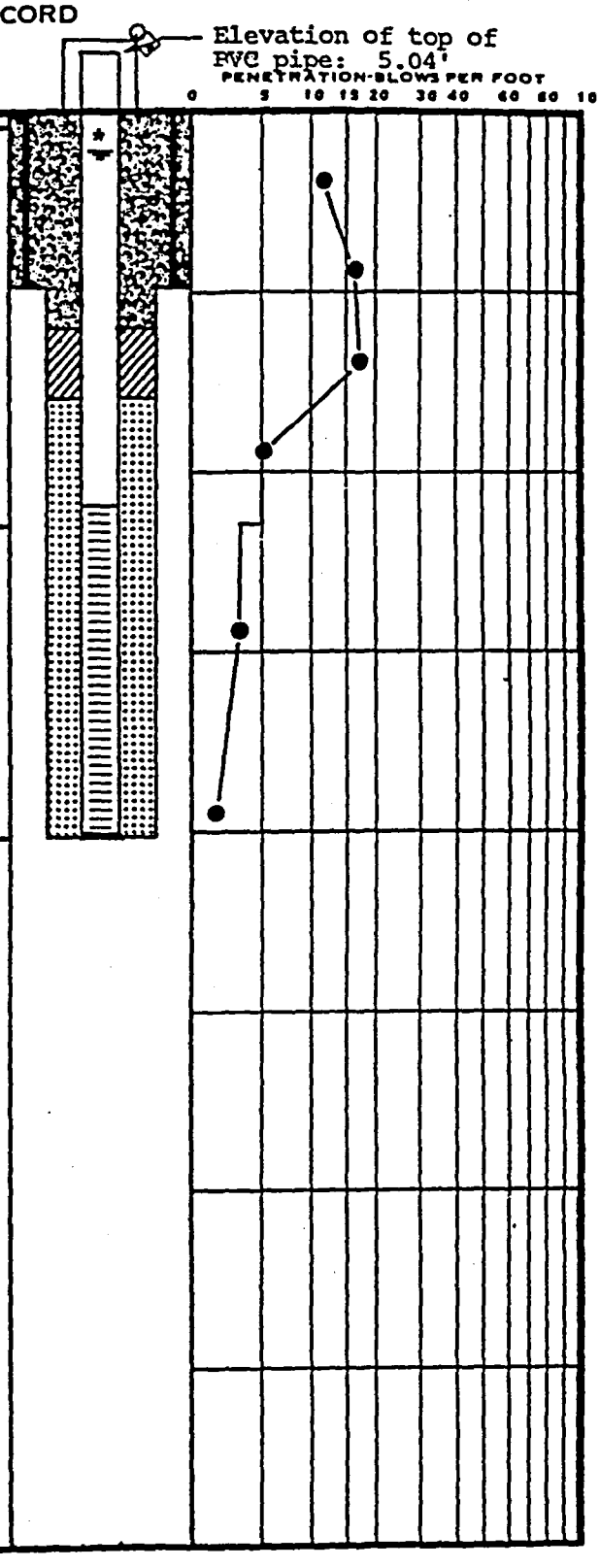
TEST BORING RECORD

Elevation of top of PVC pipe: 5.04'

ELEV.	DEPTH FEET	DESCRIPTION
3.46	0.0	
	0.5	FILL: Dark brown and black CINDERS and silty fine to medium SAND
-1.54		Firm to loose dark to light brownish-gray/grayish-brown fine to medium SAND with traces of silt
-6.54		
	11.5	
-11.54		Soft to very soft dark brown PEAT and ORGANIC SILT with wood and root fragments
-16.54	20.0	BORING TERMINATED
-21.54		



REMARKS:

* Water level on 9-19-85

1) Wash drilled with 10-inch wing bit using a bentonite and potable water drilling fluid mixture to 4.8 feet; Wash drilled with 5 7/8-inch rotary bit using a bentonite and potable water drilling fluid mixture from 4.8 to 20.0 feet

2) Well developed on 9-10-85

DRILLED BY L.S.
LOGGED BY J.T.B.
CHECKED BY C.A.S.

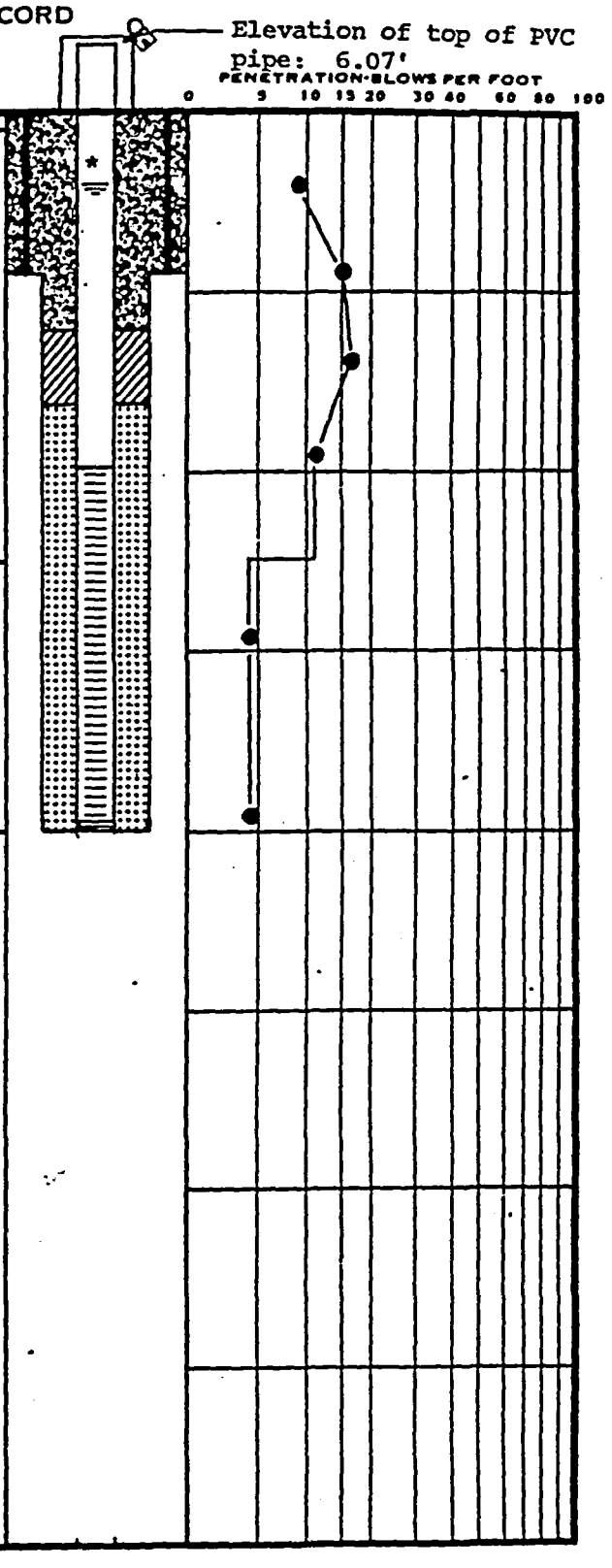
BORING NUMBER MW-6
DATE STARTED 9-4-85
DATE COMPLETED 9-5-85
JOB NUMBER HA-5276

SWP - Wilmington

TEST BORING RECORD

Elevation of top of PVC pipe: 6.07'

ELEV.	DEPTH FEET	DESCRIPTION
4.16	0.0 / 0.5	FILL: Brown slightly silty fine SAND with cinders
-0.84		Loose to firm brown slightly silty fine to medium SAND to fine to medium SAND with traces of silt
-5.84		
	12.5	
-10.84		Soft to firm dark brown PEAT and ORGANIC SILT with wood and root fragments becoming predominantly wood in last sample
-15.84	20.0	BORING TERMINATED
-20.84		



REMARKS:

* Water level on 9-19-85

1) Wash drilled with 10-inch wing bit using a bentonite and potable water drilling fluid mixture to 4.5 feet;wash drilled with 5 7/8-inch roller bit using a bentonite and potable water drilling fluid mixture from 4.5 to 20.0 feet

2) Well developed on 9-11-85

DRILLED BY L.S.
LOGGED BY J.T.B.
CHECKED BY C.A.S.

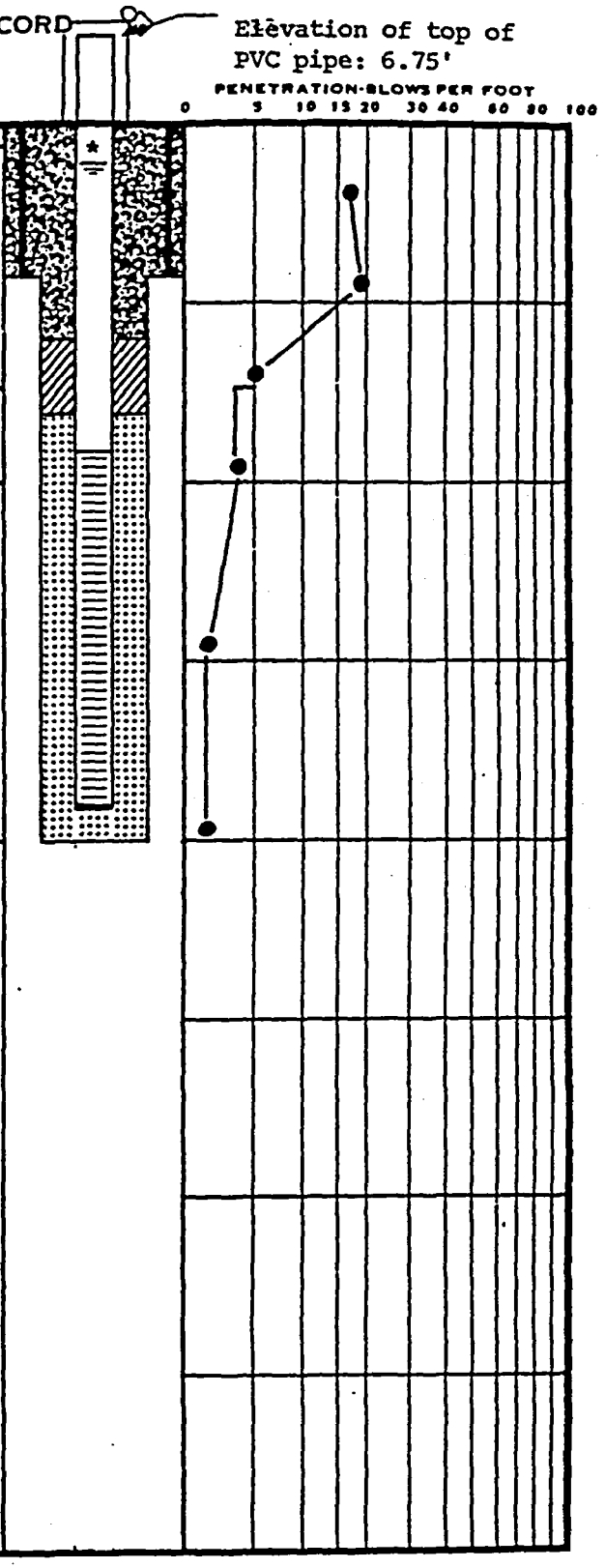
BORING NUMBER MW-7
DATE STARTED 9-4-85
DATE COMPLETED 9-6-85
JOB NUMBER HA-5276

SWP - Wilmington

TEST BORING RECORD

Elevation of top of PVC pipe: 6.75'

ELEV.	DEPTH FEET	DESCRIPTION
4.26	0.7	FILL: Dark brown silty fine SAND with occasional coarse sand
-0.74		Firm to loose dark brown to grayish-brown and brown slightly silty fine to medium SAND with traces of coarse sand
	7.4	Buried log from 7.4 to 10.0 feet
-5.74	10.0	Very soft to soft dark brown PEAT and ORGANIC SILT with wood and root fragments
-10.74		
-15.74	20.0	BORING TERMINATED
-20.74		



REMARKS:

* Water level on 9-19-85

1) Wash drilled with 10-inch wing bit using a bentonite and potable water drilling fluid mixture to 4.5 feet; wash drilled with 5 7/8-inch roller bit using a bentonite and potable water drilling fluid mixture from 4.5 to 20.0 feet

2) Well developed on 9-11-85

DRILLED BY L.S.
LOGGED BY J.T.B.
CHECKED BY C.A.S.

BORING NUMBER MW-8
DATE STARTED 9-4-84
DATE COMPLETED 9-9-85
JOB NUMBER HA-5276

SWP - Wilmington

ENVIRONMENTAL TECHNOLOGY ENGINEERING, INC.
CONSULTING ENGINEERS, SURVEYORS AND HYDROGEOLOGISTS
HYDROGEOLOGIC SERVICES

TEST BORING LOG

BORING NO. MW-8A

PROJECT: SOUTHERN WOOD PIEDMONT-WILMINGTON		SHEET NO. 1 OF 1	
CLIENT: CHUCK DAVIS	DATE FINISHED 10-1-92	JOB NO. 530-06-503	
BORING CONTRACTOR: ETE	DRILLER T. COPPIN	ELEVATION 4.12	
RIG USED ATV MUD ROTARY	INSPECTOR G.KUNTZ	DATE STARTED 9-28-92	

WELL CONSTRUCTION: GROUT; 6" PVC CASING; 2" PVC CASING; 6" PVC CASING; GROUT; CLAY; PLUG; SAND PACK; SAND PACK

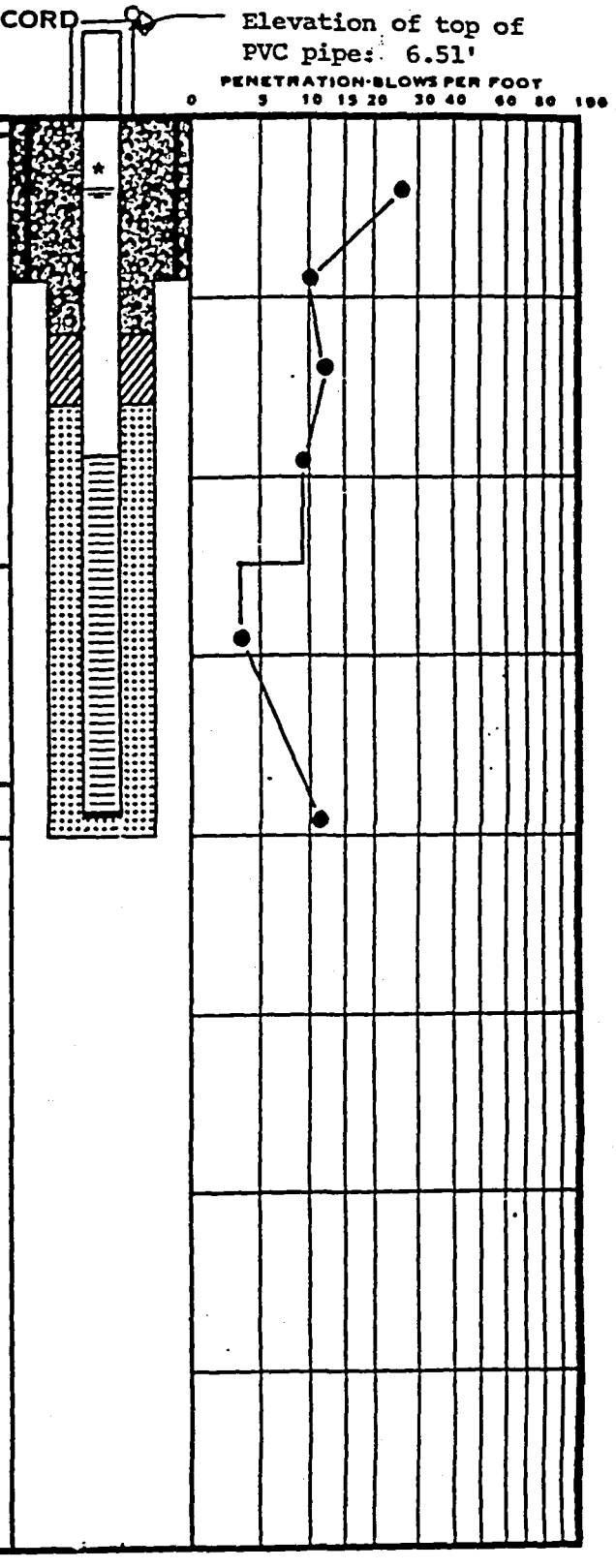
DEPTH FEET	SAMPLE No.	TYPE	BLOWS PER 6"	CLASSIFICATION	REMARKS
0	1	SS	7-6 / 6-11	Loose, yellowish brown SAND, fine to coarse, 5% clay	16" recovery; No odor; OVA = 114 ppm
	2	SS	5-10 / 18-16	Firm, brownish gray SAND, fine to coarse	18" recovery; No odor; OVA = 38.1 ppm
5	3	SS	14-15 / 16-20	Firm, brownish black organic rich silty SAND, silt to medium, 10% small pebble, 5% clay, 5% organics	8" recovery; No odor; OVA = 25.6 ppm
	4	SS	2-3 / 4-4	Very loose, brown SAND, fine to coarse	8" recovery; No odor; OVA = 38.6 ppm
10	5	SS	1-1 / 1-1	Very loose, same to 9 feet, then dark brown CLAY, trace coarse to small pebble, 10% wood	12" recovery; No odor; OVA = 32.7 ppm
	6	SS	1-1 / 1-1	Very loose, same as above	8" recovery; No odor; OVA = 28.4 ppm
	7	SS	1-1 / 1-2	Very loose, dark brown peaty CLAY, 30% wood	14" recovery; No odor; OVA = 25.7 ppm
15	8	SS	1-1 / 1-1	Very loose, same as above, 40% wood	12" recovery; No odor; OVA = 20.8 ppm
	9	SS	1-1 / 1-1	Very loose, dark brown peaty CLAY, 50% wood	10" recovery; No odor; OVA = 6.0 ppm
	10	SS	1-1 / 6-2	Loose, dark brown clayey PEAT, 35% clay	18" recovery; No odor; OVA = 14.3 ppm
20	11	SS	1-0 / 1-1	Very loose, same as above	12" recovery; No odor; OVA = 3.9 ppm
	12	SS	1-1 / 1-1	Very loose, PEAT, large wood chunk blocked shoe	2" recovery; No odor; OVA = 7.3 ppm
25	13	SS	1-5 / 7-8	Loose, brown SAND, fine to coarse, well sorted coarse	10" recovery; Very slight odor; OVA = 78.6 ppm
	14	SS	6-7 / 6-6	Loose, same as above	18" recovery; Very slight odor; OVA = 99.2 ppm
30	15	SS	1-0 / 4-5	Very loose, brown SAND, fine to coarse, moderately sorted medium, trace granule, 2% phosphate	16" recovery; No odor; OVA = 53.7 ppm
35	16	SS	6-4 / 3-3	Very loose, brown SAND, well sorted medium, 2% phosphate	10" recovery; No odor; OVA = 42.6 ppm
40	17	SS	2-2 / 1-1	Very loose, brown SAND, fine to coarse, poorly sorted, 10% granule to medium pebble, 2% phosphate, trace lignite	12" recovery; No odor; OVA = 9.5 ppm
	18	SS	12-22 / 36-50	Dense, olive gray CLAY to 44.5 feet with 5% phosphate and glauconite then light gray sandy shell mold LIMESTONE and SAND, alternating cemented shell molds and friable sand laminae, silt to large pebble	24" recovery; No odor; OVA = 2.5 ppm
45					24" recovery; No odor; OVA = 1.1 ppm
50	19	SS	15-35 / 48-15	Dense, same as above	TD = 51 feet

H:530MW8A

TEST BORING RECORD

Elevation of top of PVC pipe: 6.51'

ELEV.	DEPTH FEET	DESCRIPTION
4.46	0.0 / 0.5	FILL: Dark brown silty fine SAND with occasional coarse sand
-0.54		Very firm to loose gray to grayish-brown fine to medium SAND with traces of silt
-5.54		
	12.5	
-10.54		Soft dark brown PEAT and ORGANIC SILT with root and wood fragments
	18.5	
-15.54	20.0	Buried log from 18.5 to 20.0 feet
		BORING TERMINATED
-20.54		



REMARKS:

* Water level on 9-19-85

1) Wash drilled with 10-inch wing bit using a bentonite and potable water drilling fluid mixture to 4.5 feet; wash drilled with 5 7/8-inch roller bit using a bentonite and potable water drilling fluid mixture from 4.5 to 20.0 feet

2) Well developed on 9-11-85

DRILLED BY L.S.
LOGGED BY J.T.B.
CHECKED BY C.A.S.

BORING NUMBER MW-9
DATE STARTED 9-5-85
DATE COMPLETED 9-10-85
JOB NUMBER HA-5276

SWP - Wilmington

ENVIRONMENTAL TECHNOLOGY ENGINEERING, INC.
CONSULTING ENGINEERS, SURVEYORS AND HYDROGEOLOGISTS
HYDROGEOLOGIC SERVICES

TEST BORING LOG

BORING NO. MW-10

PROJECT: SOUTHERN WOOD PIEDMONT – WILMINGTON, NC		SHEET NO. 1 OF 1	
CLIENT: SOUTHERN WOOD PIEDMONT	DATE FINISHED	2-18-92	JOB NO. 530-06-501
BORING CONTRACTOR: ETE	DRILLER	C. AARON	ELEVATION
RIG USED MOBILE B-57	INSPECTOR	K. ANDERSON	DATE STARTED 2-18-92

WELL CONSTRUCTION: CLAY; PLUG; SAND PACK; SAND PACK

DEPTH FEET	SAMPLE NO.	TYPE	BLOWS PER 6"	CLASSIFICATION	REMARKS
0					
5	1	SS	06-10 10-15	Black – tan fine to meduium SAND	Saturated with water OVA = 0.0
10	2	SS	04-26 50	Tan fine to medium SAND	Saturated with water; OVA = 0.0
15	3	SS		Tan fine to medium SAND in upper portion of spoon; Dark brown to black PEAT at bottom of spoon	Boring terminated at 13.0 ft. OVA = 0.0
20					
25					
30					
35					
40					
45					
50					

H:53050110

ENVIRONMENTAL TECHNOLOGY ENGINEERING, INC. CONSULTING ENGINEERS, SURVEYORS AND HYDROGEOLOGISTS HYDROGEOLOGIC SERVICES		TEST BORING LOG BORING NO. MW-11
PROJECT: SOUTHERN WOOD PIEDMONT – WILMINGTON, NC		SHEET NO. 1 OF 1
CLIENT: SOUTHERN WOOD PIEDMONT	DATE FINISHED 2-18-92	JOB NO. 530-06-501
BORING CONTRACTOR: ETE	DRILLER C. AARON	ELEVATION
RIG USED MOBILE B-57	INSPECTOR K. ANDERSON	DATE STARTED 2-18-92

WELL CONSTRUCTION	DEPTH FEET	SAMPLE: LITHOLOGY	SAMPLE: NO.	SAMPLE: TYPE	SAMPLE: BLOWS PER 6"	CLASSIFICATION	REMARKS
CLAY; PLUG; SAND PACK; SAND PACK	0						
			1	SS		Hit concrete and other buried debris	
	5		2	SS	10-05 05-05	Brown-tan fine to medium SAND	Saturated with Creosote from 5 to 7 feet: OVA = 34.1
			3	SS	02-02 02-01	Brown-tan fine to medium SAND	Saturated with Creosote OVA = 38.1
	10						
			4	SS		Brown-tan fine to medium SAND in upper spoon; Encountered a dark brown to black PEAT with roots at 15.0'	Sand unit saturated with Creosote; OVA = 69.8
	15						
	20						
	25						
	30						
	35						
	40						
	45						
	50						

H:53050111

ENVIRONMENTAL TECHNOLOGY ENGINEERING, INC.
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HYDROGEOLOGIC SERVICES

TEST BORING LOG

BORING NO. MW-11A

PROJECT: SOUTHERN WOOD PIEDMONT-WILMINGTON		SHEET NO. 1 OF 1	
CLIENT: CHUCK DAVIS	DATE FINISHED 10-1-92	JOB NO. 530-06-503	
BORING CONTRACTOR: ETE	DRILLER T. COPPIN	ELEVATION 4.10	
RIG USED ATV MUD ROTARY	INSPECTOR G. KUNTZ	DATE STARTED 9-29-92	

WELL CONSTRUCTION: GROUT; 6" PVC CASING; 2" PVC CASING; 6" PVC CASING; GROUT; CLAY; PLUG; SAND PACK; SAND PACK

DEPTH FEET	SAMPLE No.	TYPE	BLOWS PER 6"	CLASSIFICATION	REMARKS
0	1	SS	8-8 10-24	Loose, brown SAND, fine to coarse, well sorted medium	18" recovery No odor OVA = 124 ppm
	2	SS	7-7 10-22	Loose, brown SAND, fine to coarse, 5% wood. At 3 feet visually stained soil.	12" recovery Strong odor OVA = 877
5	3	SS	2-1 1-1	Very loose, brown SAND, fine to coarse, 5% wood, 2" dark brown CLAY layer at 5 feet. Visually stained soil.	8" recovery Strong odor OVA = 89.1 ppm
	4	SS	6-8 1-1	Very loose, brown SAND, fine to coarse, trace wood, 8-inch dark brown peaty CLAY lense at 6 feet. Visually stained soil.	24" recovery Strong odor OVA = 153 ppm
10	5	SS	4-4 5-7	Loose, brown SAND, fine to coarse, 5% wood, visually stained soils to 8.5' then 1/4" seams of stained soil	24" recovery Strong odor OVA = 113 ppm
	6	SS	2-4 5-4	Very loose, brown SAND, fine to coarse. Visually stained soils.	12" recovery Strong odor OVA = 186 ppm
	7	SS	2-2 3-2	Very loose, same as above to 13 feet, then dark brown peaty CLAY, 30% wood. Visually stained soils in sands, no visual staining in peaty clay.	10" recovery Strong odor OVA = 131
15	8	SS	2-3 2-3	Very loose, dark brown PEAT, 20% clay	24" recovery Strong odor OVA = 66.2 ppm
	9	SS	2-4 2-3	Very loose, brownish black peaty CLAY, 30% peat	10" recovery Strong odor OVA = 98.1 ppm
	10	SS	2-2 3-2	Very loose, same as above, 40% wood	16" recovery Strong odor OVA = 113 ppm
20	11	SS	50	Grout	3" recovery
	12	SS	6-2 3-2	Very loose, brownish black peaty CLAY, 25% wood	4" recovery Moderate odor OVA = 112 ppm
25	13	SS	0-0 0-0	Very loose, same as above	24" recovery No odor OVA = 17.3 ppm
	14	SS	2-2 4-6	Very loose, same to 27.5 feet, then dark brown SAND, fine to coarse, well sorted medium	24" recovery Very slight odor OVA = 34.3 ppm
	15	SS	3-4 7-8	Loose, same as above, 10% wood	12" recovery Very slight odor OVA = 26.9 ppm
30	16	SS	5-8 7-14	Loose, light brown SAND, very fine to medium, well sorted fine, 2% phosphate	12" recovery No odor OVA = 18.6 ppm
35	17	SS	4-8 8-12	Loose, brown SAND, fine to granule, poorly sorted, 5% small pebble, 2% phosphate	12" recovery No odor OVA = 12.8 ppm
40	18	SS	25-22 20-28	Firm, brown SAND, fine to granule to 44 feet, then olive gray CLAY, 5% phosphate and glauconite, tight and dry	24" recovery No odor OVA = 7.2 ppm
45				Dense, lt gray shell mold	14" recovery
	19	SS	48-26 50+	LIMESTONE and SAND, alternating lenses of indurated cemented shell molds and friable sand, silt to very coarse, 10% granule	No odor OVA = 10.8 ppm TD = 50 feet
50					

H:530MW11A

ENVIRONMENTAL TECHNOLOGY ENGINEERING, INC.
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HYDROGEOLOGIC SERVICES

TEST BORING LOG

BORING NO. MW-11B

PROJECT: SOUTHERN WOOD PIEDMONT-WILMINGTON			SHEET NO. 1 OF 1
CLIENT: T.M. DAVIS	DATE FINISHED	10-31-93	JOB NO. 12-53015.00
BORING CONTRACTOR: ETE	DRILLER	LAYNE ENVIRONMENTAL	ELEVATION 4.13
RIG USED ATV MUD ROTARY	INSPECTOR	G. KUNTZ	DATE STARTED 10-26-93

WELL CONSTRUCTION: GROUT; 6" PVC; 2" PVC; 6" PVC; GROUT; CLAY; PLUG; SAND PACK; SAND PACK

DEPTH FEET	SAMPLE No.	TYPE	BLOWS PER 6"	CLASSIFICATION	REMARKS
0	1	PH		Loose, brown SAND, fine to coarse, well sorted medium, trace wood & organics	No odor OVA = 0.0 ppm
	2	PH		Loose, brown SAND, fine to coarse, well sorted medium, 5% wood	Slight odor OVA = 87.0 ppm
5	3	SS	2-3 / 4-6	Loose, brown SAND, fine to coarse, 5% wood. Visual staining starting @ 5'.	14" recovery Strong odor OVA = 177 ppm
	4	SS	5-7 / 7-8	Firm, brown SAND, fine to coarse, 15% wood, 6" dark brown PEAT lense. Visual staining.	14" recovery Strong odor OVA = 253 ppm
	5	SS	3-4 / 4-5	Loose, brown SAND, fine to coarse, 5% wood to 9', then peaty CLAY, 50% peat. Visually stained.	14" recovery Strong odor OVA = 405 ppm
10	6	SS	5-6 / 6-7	Firm, brown SAND, fine to coarse. Visually stained.	14" recovery Strong odor OVA = 418 ppm
	7	SS	3-2 / 2-2	Very loose, same as above to 13 feet, then dark brown peaty CLAY, 50% peat. Visually stained in sands.	24" recovery Strong odor OVA = 187 ppm
15	8	SS	1-1 / 1-2	Very loose, dark brown PEAT, 20% clay. 8" sand lense. Visual staining in sand.	14" recovery Strong odor OVA = 592 ppm
	9	SS	2-3 / 2-2	Very loose, brownish black peaty CLAY, 50% peat. Visual staining to 17'.	18" recovery Strong odor OVA = 370 ppm
	10	SS	2-1 / 1-4	Loose, same as above, 40% peat. Pit casing to 20'	16" recovery Strong odor OVA = 372 ppm
20	11	SS	2-1 / 1-2	Very loose, brownish black peaty CLAY, 25% peat	4" recovery Slight odor OVA = 139 ppm
	12	SS	1-1 / 1-3	Very loose, brownish black peaty CLAY, 25% peat	24" recovery Slight odor OVA = 78.7 ppm
25	13	SS	1-1 / 1-2	Very loose, same as above, 35% peat	8" recovery Slight odor OVA = 40.1 ppm
	14	SS	2-4 / 4-5	Very loose, same to 27 feet, then dark brown SAND, fine to coarse, trace very coarse to granule	24" recovery Slight odor OVA = 56.9 ppm
30	15	SS	2-4 / 8-9	Firm, dark brown SAND, fine to medium, well sorted	12" recovery Very slight odor OVA = 65.6 ppm
35	16	SS	2-3 / 3-7	Loose, brown SAND, fine to coarse, coarse dominant	12" recovery No odor OVA = 58.6 ppm
40	17	SS	6-5 / 8-7	Firm, brown SAND, fine to granule, 10% granule to small pebble, poorly sorted, to 41.5', then olive gray marine CLAY, 5% phosphate and glauconite. Sheen appeared in drilling mud when hit top of clay	12" recovery No odor OVA = 63.3 ppm
	18	SS	9-15 / 13-17	Very stiff, olive gray CLAY, 10% phosphate & glauconite, 1% mollusc fragments	24" recovery Slight odor OVA = 78.4 ppm
45	19	SS	15-26 / 22-24	Hard, olive gray CLAY, 15% silt to very fine sand, 10% phosphate and glauconite	24" recovery No odor OVA = 20.3 ppm TD = 46 feet
50					

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TEST BORING LOG

BORING NO. MW-12

PROJECT: SOUTHERN WOOD PIEDMONT – WILMINGTON, NC			SHEET NO. 1 OF 1
CLIENT: SOUTHERN WOOD PIEDMONT	DATE FINISHED	2-18-92	JOB NO. 530-06-501
BORING CONTRACTOR: ETE	DRILLER	C. AARON	ELEVATION
RIG USED MOBILE B-57	INSPECTOR	K. ANDERSON	DATE STARTED 2-18-92

WELL CONSTRUCTION: CLAY; PLUG; SAND PACK; SAND PACK

DEPTH FEET	SAMPLE No.	SAMPLE TYPE	BLOWS PER 6"	CLASSIFICATION	REMARKS
0					
5	1	SS	19-14 06-07	Brown-tan fine to medium well sorted SAND	No visual Creosote OVA = 13.3
10	2	SS	03-05 10-18	Same as above except Sand is saturated with Creosote	OVA = 72.7
	3	SS	08-11 19-28	Same as above	OVA = 45.1
15				Organic rich dark brown to black PEAT with roots	
20					
25					
30					
35					
40					
45					
50					

H:53050112

ENVIRONMENTAL TECHNOLOGY ENGINEERING, INC.
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TEST BORING LOG

BORING NO. MW-13

PROJECT: SOUTHERN WOOD PIEDMONT – WILMINGTON, NC			SHEET NO. 1 OF 1
CLIENT: SOUTHERN WOOD PIEDMONT	DATE FINISHED	2-18-92	JOB NO. 530-06-501
BORING CONTRACTOR: ETE	DRILLER	C. AARON	ELEVATION
RIG USED MOBILE B-57	INSPECTOR	K. ANDERSON	DATE STARTED 2-18-92

WELL CONSTRUCTION: CLAY; PLUG; SAND PACK; SAND PACK

DEPTH FEET	SAMPLE: LITHOLOGY	No.	TYPE	BLOWS PER 6"	CLASSIFICATION	REMARKS
0						
5		1	SS	03-01 01-0	Brown-tan fine to medium SAND	Visual Creosote encountered in borehole immediately upon drilling OVA = 102.0
10		2	SS	05-07 12	Same as above	No visual Creosote; OVA = 47.8
15		3	SS		Dark brown to balck organic rich PEAT	No visual Creosote OVA = 3.0
20						
25						
30						
35						
40						
45						
50						

H:53050113

ENVIRONMENTAL TECHNOLOGY ENGINEERING, INC.
CONSULTING ENGINEERS, SURVEYORS AND HYDROGEOLOGISTS
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TEST BORING LOG

BORING NO. MW-14

PROJECT: SOUTHERN WOOD PIEDMONT – WILMINGTON, NC			SHEET NO. 1 OF 1
CLIENT: SOUTHERN WOOD PIEDMONT	DATE FINISHED	2-19-92	JOB NO. 530-06-501
BORING CONTRACTOR: ETE	DRILLER	C. AARON	ELEVATION
RIG USED MOBILE B-57	INSPECTOR	K. ANDERSON	DATE STARTED 2-19-92

WELL CONSTRUCTION: CLAY; PLUG; SAND PACK; SAND PACK

DEPTH FEET	SAMPLE No.	TYPE	BLOWS PER 6"	CLASSIFICATION	REMARKS
0	1	SS	2-5 / 6-5	Dark brown-black Fill material	OVA = 0.0
	2	SS	9-5 / 4-3	Brown-tan fine to medium SAND	Visual Creosote OVA = 0.0
5	3	SS	2-2 / 4-3	Same as above	Visual Creosote OVA = 19.3
	4	SS	3-3 / 4-10	Same as above	Visual Creosote OVA = 34.7
10	5	SS		Black-brown organic rich PEAT with roots	Visual Creosote OVA = 27.1
	6	SS		Same as above with large wood fragments throughout	Visual Creosote OVA = 9.6
	7	SS		Black PEAT with brown-orange wood fragment at end of spoon	Visual Creosote OVA = 25.3
15	8	SS		Black-brown PEAT with root fragments	Visual Creosote OVA = 19.4
	9	SS		No sample retrieved	
	10	SS		Black-brown PEAT with root fragments	No visual Creosote OVA = 8.0
20	11	SS		Black-brown PEAT to approximately 21.5 ft bgs; Brown-tan medium to coarse SAND below peat	No visual Creosote OVA = 5.2
25					
30					
35					
40					
45					
50					

H:53050114

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HYDROGEOLOGIC SERVICES

TEST BORING LOG

BORING NO. MW-14A

PROJECT: SOUTHERN WOOD PIEDMONT-WILMINGTON			SHEET NO. 1 OF 1
CLIENT: T.M. DAVIS	DATE FINISHED	11-2-93	JOB NO. 12-53015.00
BORING CONTRACTOR: ETE	DRILLER	LAYNE ENVIRONMENTAL	ELEVATION 2.76
RIG USED ATV MUD ROTARY	INSPECTOR	G. KUNTZ	DATE STARTED 10-27-93

WELL CONSTRUCTION: GROUT; 6" PVC; 2" PVC; 6" PVC; GROUT; CLAY; PLUG; SAND PACK; SAND PACK

DEPTH FEET	SAMPLE No.	TYPE	BLOWS PER 6"	CLASSIFICATION	REMARKS
0	1	PH		Loose, brown SAND, fine to coarse, coarse dominant, fill, trace granule	No odor OVA = 26.1 ppm
	2	PH		Loose, brown SAND, very fine to coarse, medium dominant. Visual staining @ 3'.	Strong odor OVA = 94.3 ppm
5	3	SS	2-8 1-3	Very loose, brown SAND and PEAT, 50% peat, 3" wood fragment. Visual staining.	6" recovery Strong odor OVA = 88.3 ppm
	4	SS	2-1 1-3	Very loose, brown SAND, fine to coarse to 7.5', then dark brown CLAY. Visual staining in sand.	14" recovery Strong odor OVA = 149 ppm
	5	SS	1-1 1-1	Very soft, dark brown CLAY to 8.5', then dark brown PEAT	18" recovery Moderate odor OVA = 85.3 ppm
10	6	SS	1-1 1-1	Very soft, dark brown clayey PEAT, 30% clay	24" recovery Slight odor OVA = 89.5 ppm
	7	SS	1-1 1-1	Very soft, dark brown peaty CLAY, 50% peat	24" recovery Very slight odor OVA = 82.8 ppm
15	8	SS	1-1 3-5	Firm, dark brown peaty CLAY, 35% peat Pit casing to 16'	18" recovery Very slight odor OVA = 65.1
	9	SS	1-1 1-3	Soft, brownish black peaty CLAY, 25% peat	4" recovery Moderate odor OVA = 116 ppm
	10	SS	2-2 2-4	Firm, same as above. Slight sheen in drilling mud.	4" recovery Moderate odor OVA = 88.1 ppm
20	11	SS	3-1 1-2	Soft, same as above. Sheen in drilling mud.	2" recovery Moderate odor OVA = 107 ppm
	12	SS	2-2 3-5	Firm, brownish black peaty CLAY, 50% peat. Little visual staining.	18" recovery Moderate odor OVA = 137 ppm
25	13	SS	3-2 2-3	Loose, brown SAND, fine to coarse, 5% very coarse, trace wood.	18" recovery Moderate odor OVA = 447 ppm
	14	SS	4-5 5-6	Firm, same as above.	18" recovery Moderate odor OVA = 69.4 ppm
30	15	SS	2-1 3-5	Loose, brown SAND, fine to granule, 5% granule to small pebble	18" recovery Slight odor OVA = 62.0 ppm
35	16	SS	3-6 6-6	Firm, brown SAND, fine to coarse, well sorted medium	12" recovery Slight odor OVA = 28.5 ppm
40	17	SS	3-7 6-8	Firm, same sand as above to 40.5', then olive gray CLAY	24' recovery Slight odor OVA = 27.6 ppm TD = 42'
45					
50					

ENVIRONMENTAL TECHNOLOGY ENGINEERING, INC.
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HYDROGEOLOGIC SERVICES

TEST BORING LOG

BORING NO. MW-15

PROJECT: SOUTHERN WOOD PIEDMONT – WILMINGTON, NC			SHEET NO. 1 OF 2
CLIENT: SOUTHERN WOOD PIEDMONT	DATE FINISHED	2-19-92	JOB NO. 530-06-501
BORING CONTRACTOR: ETE	DRILLER	C. AARON	ELEVATION
RIG USED MOBILE B-57	INSPECTOR	K. ANDERSON	DATE STARTED 2-19-92

WELL CONSTRUCTION: CLAY, PLUG, SAND PACK, SAND PACK

DEPTH FEET	SAMPLE No.	SAMPLE TYPE	BLOWS PER 6"	CLASSIFICATION	REMARKS
0					
5	1	SS	1-1 / 4-4	Fine to medium, loose to very loose brown SAND	Visual oil; diesel fuel odor OVA = 58.3
10	2	SS		Fine to medium, brown SAND	No visual oil; OVA = 15.6
15	3	SS		Fine to medium, brown SAND in upper spoon; Dark brown to black PEAT with root fragments in lower part of spoon	No visual oil OVA = 5.4
20					
25					
30					
35					
40					
45					
50					

H:53050115

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TEST BORING LOG

BORING NO. MW-16

PROJECT: SOUTHERN WOOD PIEDMONT – WILMINGTON, NC			SHEET NO. 1 OF 1
CLIENT: SOUTHERN WOOD PIEDMONT	DATE FINISHED	2-19-92	JOB NO. 530-06-501
BORING CONTRACTOR: ETE	DRILLER	C. AARON	ELEVATION
RIG USED MOBILE B-57	INSPECTOR	K. ANDERSON	DATE STARTED 2-19-92

WELL CONSTRUCTION: CLAY PLUG; SAND PACK; SAND PACK

DEPTH FEET	SAMPLE NO.	TYPE	BLOWS PER 6"	CLASSIFICATION	REMARKS
0	1	SS		Fine to medium, brown SAND	Saturated with diesel fuel OVA = 104
5	2	SS		Medium tan to brown SAND with some wood fragments	Little odor OVA = 42.6
10				Same as above	Slight diesel odor OVA = 32.5
15	3	SS		Dark brown to black PEAT contact at 15.0 ft.	
20					
25					
30					
35					
40					
45					
50					

H:53050116

ENVIRONMENTAL TECHNOLOGY ENGINEERING, INC.
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TEST BORING LOG

BORING NO. MW-17

PROJECT: SOUTHERN WOOD PIEDMONT – WILMINGTON, NC		SHEET NO. 1 OF 1	
CLIENT: SOUTHERN WOOD PIEDMONT	DATE FINISHED 2-19-92	JOB NO. 530-06-501	
BORING CONTRACTOR: ETE	DRILLER C. AARON	ELEVATION	
RIG USED MOBILE B-57	INSPECTOR K. ANDERSON	DATE STARTED 2-19-92	

WELL CONSTRUCTION	DEPTH FEET	SAMPLE LITHOLOGY	SAMPLE No.	SAMPLE TYPE	BLOWS PER 6"	CLASSIFICATION	REMARKS
CLAY PLUG; SAND PACK; SAND PACK	0						
	5		1	SS	10-2 / 2-2	Fine to medium brown SAND with wood fragment at bottom of spoon	Saturated with diesel fuel: OVA = 118
	10		2	SS	2-2 / 2-2	Wood fragments in upper portion of spoon with a fine to medium brown SAND in bottom of spoon	Diesel fuel odor OVA = 57.1
			3	SS		Fine to medium brown SAND	Saturated with diesel fuel; OVA = 72.3
	15		4	SS		Dark Brown PEAT with root fragments	No visual oil OVA = 39.1
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TEST BORING LOG

BORING NO. MW-18

PROJECT: SOUTHERN WOOD PIEDMONT-WILMINGTON		SHEET NO. 1 OF 1	
CLIENT: CHUCK DAVIS	DATE FINISHED	10-7-92	JOB NO. 530-06-503
BORING CONTRACTOR: ETE	DRILLER	T. COPPIN	ELEVATION 4.26
RIG USED ATV MUD ROTARY	INSPECTOR	G. KUNTZ	DATE STARTED 10-6-92

WELL CONSTRUCTION: CLAY PLUG; SAND PACK; SAND PACK

DEPTH FEET	SAMPLE No.	TYPE	BLOWS PER 6"	CLASSIFICATION	REMARKS
0	1	SS	0-0 / 0-0	Very loose, brown SAND, fine to medium, 5% coarse to granule	14" recovery No odor OVA = 30 ppm
	2	SS	4-4 / 10-13	Loose, brown SAND, fine to coarse, 5% granule, poorly sorted	18" recovery Slight diesel odor OVA = 35.3 ppm
5	3	SS	3-2 / 3-2	Very loose, brown SAND, fine to coarse, coarse dominant, 20% very coarse	14" recovery No odor OVA = 27.9 ppm
	4	SS	4-5 / 6-7	Loose, same as above, 35% very coarse to granule, 2% small pebble	18" recovery Slight diesel odor OVA = 20.6 ppm
10	5	SS	6-12 / 12-10	Firm, brown pebbly SAND, fine to coarse, 30% granule to small pebble	12" recovery No odor OVA = 9.9 ppm
	6	SS	4-6 / 5-11	Loose, brown SAND, fine to coarse, medium dominant	18" recovery No odor OVA = 6.6 ppm
	7	SS	6-8 / 10-9	Loose, brown pebbly SAND, very fine to coarse, 30% granule to small pebble to 13.5 feet, then dark brown clayey PEAT, 30% clay	24" recovery No odor OVA = 5.1 ppm TD = 14 feet
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TEST BORING LOG

BORING NO. MW-19

PROJECT: SOUTHERN WOOD PIEDMONT-WILMINGTON		SHEET NO. 1 OF 1	
CLIENT: CHUCK DAVIS	DATE FINISHED	10-6-92	JOB NO. 530-06-503
BORING CONTRACTOR: ETE	DRILLER	T. COPPIN	ELEVATION 3.19
RIG USED ATV MUD ROTARY	INSPECTOR	G. KUNTZ	DATE STARTED 10-6-92

WELL CONSTRUCTION: GROUT; CLAY; SAND PACK; 2" STAINLESS STEEL; GROUT; PLUG; SAND PACK

DEPTH FEET	SAMPLE NO.	TYPE	BLOWS PER 6"	CLASSIFICATION	REMARKS
0	1	SS	0-0 / 0-0	Very loose, dark brown SAND, fine to coarse, 5% granule	8" recovery No odor OVA = 201 ppm
	2	SS	4-4 / 5-5	Loose, brown SAND, fine to coarse, poorly sorted	18" recovery No odor OVA = 276 ppm
5	3	SS	6-7 / 5-7	Loose, brown SAND, fine to medium, well sorted medium	12" recovery No odor OVA = 92.4 ppm
	4	SS	5-5 / 6-8	Loose, brown SAND, fine to coarse, poorly sorted	18" recovery No odor OVA = 69.6 ppm
	5	SS	6-7 / 8-9	Loose, same as above, 10% wood	24" recovery Slight odor OVA = 183 ppm
10	6	SS	3-3 / 3-1	Very loose, same as above, 20% wood. Visually stained soil 11.5 to 12 feet.	24" recovery Strong odor OVA = 210 ppm
	7	SS	1-1 / 1-1	Very loose, brownish black clayey PEAT, 25% clay	18" recovery Moderate odor OVA = 45.6 ppm TD = 14 feet

15 20 25 30 35 40 45 50

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TEST BORING LOG

BORING NO. MW-19A

PROJECT: SOUTHERN WOOD PIEDMONT-WILMINGTON		SHEET NO. 1 OF 1	
CLIENT: CHUCK DAVIS	DATE FINISHED	10-2-92	JOB NO. 530-06-503
BORING CONTRACTOR: ETE	DRILLER	T. COPPIN	ELEVATION 3.15
RIG USED ATV MUD ROTARY	INSPECTOR	G. KUNTZ	DATE STARTED 9-30-92

WELL CONSTRUCTION: GROUT; 6" PVC CASING; 2" PVC CASING; 6" PVC CASING; GROUT; CLAY; PLUG; SAND PACK; SAND PACK

DEPTH FEET	SAMPLE No.	TYPE	BLOWS PER 6"	CLASSIFICATION	REMARKS
0	1	SS	3-2 / 2-3	Very loose, brown SAND, fine to coarse	16" recovery; No odor; OVA = 214 ppm
	2	SS	8-7 / 6-8	Loose, brown pebbly SAND, fine to coarse, 25% small pebble	8" recovery; No odor; OVA = 290 ppm
5	3	SS	4-5 / 6-8	No recovery	
	4	SS	6-8 / 8-9	Loose, brown SAND, fine to coarse, 5% wood	16" recovery; No odor; OVA = 89.5 ppm
	5	SS	4-4 / 3-1	Very loose, same as above	12" recovery; Slight odor; OVA = 183 ppm
10	6	SS	5-4 / 3-1	Very loose, same as above to 11.5 feet, then 1-inch dark brown clay lense followed by same sand to 12 feet	18" recovery; Visual creosote 11.5' to 12'; OVA = 210 ppm
	7	SS	1-1 / 1-2	Very loose, brownish black clayey PEAT, 25% clay	18" recovery; Moderate odor; OVA = 42.3 ppm
15	8	SS	1-1 / 1-1	Very loose, brownish black peaty CLAY, 30% peat	24" recovery; No odor; OVA = 19.0 ppm
	9	SS	1-1 / 1-1	Very loose, same as above, 50% wood	18" recovery; No odor; OVA = 10.1 ppm
	10	SS	1-2 / 1-0	Same as above	14" recovery; No odor; OVA = 8.6 ppm
20	11	SS	5-1 / 1-2		No recovery
	12	SS	0-0 / 2-3	Very loose, dark brown peaty CLAY, 30% wood	12" recovery; No odor; OVA = 11.9 ppm
25	13	SS	1-2 / 2-4	Very loose, same as above to 25 feet, then brown SAND, fine to coarse, poorly sorted	24" recovery; No odor; OVA = 8.6 ppm
30	14	SS	6-9 / 7-7	Loose, light brown SAND, fine to coarse, well sorted medium	12" recovery; No odor; OVA = 9.8 ppm
35	15	SS	5-3 / 3-2	Very loose, brown SAND, fine to granule, moderately sorted medium, 2% phosphate	12" recovery; No odor; OVA = 4.6 ppm
40	16	SS	0-0 / 12-16	Firm, olive gray CLAY, 5% phosphate and glauconite, tight and dry	24" recovery; No odor; OVA = 4.9 ppm
	17	SS	8-27 / 27-26	Firm, same as above, 10% phosphate and glauconite	24" recovery; No odor; OVA = 5.2 ppm
	18	SS	65	Very dense, light gray sandy shell mold LIMESTONE, 35% sand	2" recovery; No odor; OVA = 3.1 ppm; TD = 43 feet 2 inches
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TEST BORING LOG

BORING NO. MW-20

PROJECT: SOUTHERN WOOD PIEDMONT-WILMINGTON		SHEET NO. 1 OF 1	
CLIENT: CHUCK DAVIS	DATE FINISHED	10-7-92	JOB NO. 530-06-503
BORING CONTRACTOR: ETE	DRILLER	T. COPPIN	ELEVATION 3.17
RIG USED ATV MUD ROTARY	INSPECTOR	G. KUNTZ	DATE STARTED 10-7-92

WELL CONSTRUCTION: GROUT; 2" PVC CASING; CLAY; SAND PACK; GROUT; PLUG; SAND PACK

DEPTH FEET	SAMPLE No.	TYPE	BLOWS PER 6"	CLASSIFICATION	REMARKS
0	1	SS	1-0 / 0-0	Very loose, black clayey PEAT to 1 foot then brown SAND, fine to coarse	18" recovery; Slight odor; OVA = 120 ppm
	2	SS	5-5 / 7-11	Loose, brown SAND, fine to coarse, poorly sorted	24" recovery; Very slight odor; OVA = 66.0 ppm
5	3	SS	0-0 / 5-5	Very loose, same as above	18" recovery; Very slight odor; OVA = 106 ppm
	4	SS	5-5 / 5-6	Loose, same as above	18" recovery; No odor; OVA = 43.5 ppm
	5	SS	4-2 / 1-2	Very loose, brown SAND, very fine to medium, 10% coarse, 1/4" dark gray clay lense at 10 feet	14" recovery; No odor; OVA = 57.1 ppm
10	6	SS	1-0 / 1-2	Very loose, brownish gray silty SAND, silt to medium, 35% silt, 10% clay, 1-inch dark gray lense at 11.5 feet	20" recovery; No odor; OVA = 9.8 ppm
	7	SS	1-2 / 1-2	Very loose, brownish black peaty CLAY, 25% wood	24" recovery; Very slight odor; OVA = 15.7 ppm; TD = 14 feet
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ENVIRONMENTAL TECHNOLOGY ENGINEERING, INC. CONSULTING ENGINEERS, SURVEYORS AND HYDROGEOLOGISTS HYDROGEOLOGIC SERVICES	TEST BORING LOG BORING NO. MW-20A
PROJECT: SOUTHERN WOOD PIEDMONT-WILMINGTON	SHEET NO. 1 OF 1
CLIENT: T.M. DAVIS — DATE FINISHED 11-8-93	JOB NO. 12-53015.00
BORING CONTRACTOR: ETE — DRILLER LAYNE ENVIRONMENTAL	ELEVATION 3.10
RIG USED ATV MUD ROTARY — INSPECTOR G. KUNTZ	DATE STARTED 10-29-93

WELL CONSTRUCTION: GROUT; 6" PVC; 2" PVC; 6" PVC; GROUT; CLAY; PLUG; SAND PACK; SAND PACK

DEPTH FEET	SAMPLE No.	TYPE	BLOWS PER 6"	CLASSIFICATION	REMARKS
0	1	PH		Very loose, black clayey PEAT to 1', then brown SAND, fine to coarse, coarse dominant	No odor OVA = 75.8 ppm
	2	PH		Very loose, brown SAND, fine to coarse	No odor OVA = 35.4 ppm
5	3	SS	2-1 1-2	Very loose, brown SAND, fine to coarse	14" recovery No odor OVA = 131 ppm
	4	SS	3-2 2-5	Loose, brown SAND, fine to coarse to 7.5', then brownish gray sandy SILT, 30% very fine to fine sand, 5% clay, trace mica, multiple 1/4" lignite laminae	18" recovery No odor OVA = 225 ppm
	5	SS	4-5 5-4	Loose, same to 9.5', then brownish black peaty CLAY, 40% peat	24" recovery No odor OVA = 190 ppm
10	6	SS	3-5 5-2	Loose, dark brown peaty CLAY, 30% peat	20" recovery No odor OVA = 236 ppm
	7	SS	2-4 2-2	Very loose, brownish black PEAT and CLAY	12" recovery No odor OVA = 164 ppm
15	8	SS	2-2 1-1	Very loose, dark brown peaty CLAY, 30% peat	18" recovery No odor OVA = 121 ppm
	9	SS	2-1 1-3	Pit casing to 16' Grout in spoon	No recovery
	10	SS	3-4 3-3	Grout in spoon	No recovery
20	11	SS	2-2 2-4	Firm, dark brown peaty CLAY, 25% peat	4" recovery No odor OVA = 24.3 ppm
	12	SS	3-7 5-5	Loose, brownish black PEAT to 23.5', then brown SAND, fine to coarse, coarse dominant	18" recovery No odor OVA = 33.0 ppm
25	13	SS	6-3 3-5	Loose, dark brown SAND, fine to very coarse, 10% very coarse, 5% wood	18" recovery No odor OVA = 35.4 ppm
30	14	SS	3-4 4-8	Firm, brown SAND, fine to coarse	10" recovery No odor OVA = 42.4 ppm
35	15	SS	5-6 6-7	Firm, whitish brown SAND, fine to coarse, 2" gray clay lense at 36'	8" recovery No odor OVA = 47.1 ppm
40	16	SS	3-4 5-7	Firm, brown SAND, fine to granule, 25% very coarse to granule to 41', then olive gray CLAY, 10% glauconite and phosphate	18" recovery No odor OVA = 41.1 ppm TD = 42'
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TEST BORING LOG

BORING NO. MW-21

PROJECT: SOUTHERN WOOD PIEDMONT-WILMINGTON		SHEET NO. 1 OF 1	
CLIENT: CHUCK DAVIS	DATE FINISHED	10-7-92	JOB NO. 530-06-503
BORING CONTRACTOR: ETE	DRILLER	T. COPPIN	ELEVATION 3.17
RIG USED ATV MUD ROTARY	INSPECTOR	G. KUNTZ	DATE STARTED 10-7-92

WELL CONSTRUCTION: CLAY; 2" PVC; PLUG; SAND PACK; SAND PACK

DEPTH FEET	SAMPLE No.	TYPE	BLOWS PER 6"	CLASSIFICATION	REMARKS
0	1	SS	1-1 / 1-1	Very loose, brownish black clayey PEAT to 6", then brown SAND, fine to coarse	18" recovery No odor OVA = 43.2 ppm
	2	SS	5-3 / 6-8	Loose, brown SAND, fine to coarse, coarse dominant	18" recovery No odor OVA = 86.6 ppm
5	3	SS	4-2 / 2-2	Very loose, brown SAND, fine to coarse, medium dominant	12" recovery No odor OVA = 52.6 ppm
	4	SS	1-3 / 7-8	Loose, same to 7', then 4" dark gray clay lense, then peaty CLAY, 30% wood	24" recovery No odor OVA = 20.6 ppm
10	5	SS	1-1 / 0-1	Very loose, brownish black peaty CLAY, 30% wood	24" recovery No odor OVA = 10.8 ppm TD= 10 feet
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TEST BORING LOG

BORING NO. MW-22

PROJECT: SOUTHERN WOOD PIEDMONT-WILMINTON			SHEET NO. 1 OF 1
CLIENT: CHUCK DAVIS	DATE FINISHED	10-7-92	JOB NO. 530-06-503
BORING CONTRACTOR: ETE	DRILLER	T. COPPIN	ELEVATION 3.02
RIG USED ATV MUD ROTARY	INSPECTOR	G. KUNTZ	DATE STARTED 10-7-92

WELL CONSTRUCTION: GROUT; 2" STAINLESS STEEL; GROUT; CLAY; PLUG; SAND PACK; SAND PACK

DEPTH FEET	SAMPLE No.	TYPE	BLOWS PER 6"	CLASSIFICATION	REMARKS
0	1	SS	5-4	Loose, black organic rich SAND, silt to coarse, 20% clay, 15% plant and wood material to 1.5', then brown SAND	18" recovery Slight diesel odor OVA = 109 ppm
			6-5		
	2	SS	5-6	Loose, brown SAND, fine to coarse	24" recovery Creosote stained soil at 3' OVA = 87.7 ppm
			6-4		
5	3	SS	4-2	Very loose, same as above	14" recovery Creosote stained soils OVA = 107 ppm
			4-3		
	4	SS	4-2	Loose, brown SAND, fine to coarse, well sorted medium	24" recovery Creosote stained soils OVA = 157 ppm
			6-9		
	5	SS	4-3	Very loose, same as above	20" recovery Creosote stained soils to 9' OVA = 75.6 ppm
			4-4		
10	6	SS	2-3	Loose, brown SAND, fine to coarse, poorly sorted, few 1/2" dark brown clay lenses at 11.5'	18" recovery Moderate odor OVA = 84.7 ppm
			6-7		
	7	SS	1-1	Very loose, brownish black clayey PEAT, 35% clay	24" recovery Slight creosote odor OVA = 25.5 ppm TD = 14 feet
			1-2		
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TEST BORING LOG

BORING NO. MW-22A

PROJECT: SOUTHERN WOOD PIEDMONT-WILMINGTON			SHEET NO. 1 OF 1
CLIENT: T.M. DAVIS	DATE FINISHED	11-3-93	JOB NO. 12-53015.00
BORING CONTRACTOR: ETE	DRILLER	LAYNE ENVIRONMENTAL	ELEVATION 3.07
RIG USED ATV MUD ROTARY	INSPECTOR	G. KUNTZ	DATE STARTED 10-29-93

WELL CONSTRUCTION: GROUT; 6" PVC; 2" PVC; 6" PVC; GROUT; CLAY; PLUG; SAND PACK; SAND PACK

DEPTH FEET	SAMPLE No.	TYPE	BLOWS PER 6"	CLASSIFICATION	REMARKS
0	1	PH		Loose, dark brown SAND, fine to coarse. Diesel staining.	Slight diesel odor OVA = 32.9 ppm
	2	PH		Loose, brown SAND, fine to coarse, trace granule. Visual staining.	Strong odor OVA = 32.5 ppm
5	3	SS	2-3, 3-8	Firm, grayish brown SAND, very fine to very coarse. Multiple 1/4" visually stained seams.	24" recovery Strong odor OVA = 63.4 ppm
	4	SS	3-2, 2-4	Loose, brown SAND, very fine to very coarse	18" recovery Moderate odor OVA = 58.6 ppm
	5	SS	3-6, 4-5	Loose, brown SAND, fine to coarse	12" recovery Slight odor OVA = 25.2 ppm
10	6	SS	2-4, 3-3	Loose, same, two 1/8" clayey SAND laminae	14" recovery Slight odor OVA = 63.5 ppm
	7	SS	1-1, 2-1	Very soft, brownish black clayey PEAT, 25% clay	24" recovery Very slight odor OVA = 88.4 ppm
15	8	SS	1-1, 1-2	Very soft, brownish black peaty CLAY, 45% peat	18" recovery No odor OVA = 86.2 ppm
				Pit casing to 16'	
	9	SS	1-1, 1-2	Very soft, brownish black peaty CLAY, 25% peat	4" recovery Very slight odor OVA = 68.4 ppm
	10	SS	3-4, 4-6	Grout in spoon	No recovery
20	11	SS	6-5, 2-1	Grout in spoon	No recovery
	12	SS	3-5, 5-5	Loose, brownish black peaty CLAY	12" recovery No odor OVA = 49.3 ppm
25	13	SS	2-3, 2-4	Loose, brown peaty SAND, fine to coarse, 30% large wood fragments	6" recovery No odor OVA = 108 ppm
	14	SS	4-5, 4-6	Loose, brown SAND, medium to coarse, well sorted coarse	18" recovery Slight odor OVA = 189 ppm
30	15	SS	3-5, 5-4	Loose, brown SAND, medium to coarse, 10% very coarse	14" recovery Very slight odor OVA = 159 ppm
35	16	SS	6-5, 5-3	Loose, brown SAND, medium to coarse, 30% very coarse to small pebble	14" recovery No odor OVA = 165 ppm
40	17	SS	3-7, 7-9	Firm, brown pebbly SAND, medium to coarse, 30% very coarse to small pebble. Small pebble laminae between 41' and 41'4", then sharp contact to olive gray CLAY at 42'	24" recovery No odor OVA = 105 ppm TD = 42'
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TEST BORING LOG

BORING NO. MW-23

PROJECT: SOUTHERN WOOD PIEDMONT-WILMINGTON		SHEET NO. 1 OF 1	
CLIENT: CHUCK DAVIS	DATE FINISHED	10-8-92	JOB NO. 530-06-503
BORING CONTRACTOR: ETE	DRILLER	T. COPPIN	ELEVATION 2.67
RIG USED ATV MUD ROTARY	INSPECTOR	G. KUNTZ	DATE STARTED 10-8-92

WELL CONSTRUCTION: GROUT; CLAY; 2" PVC; SAND PACK; GROUT; PLUG; SAND PACK

DEPTH FEET	SAMPLE No.	TYPE	BLOWS PER 6"	CLASSIFICATION	REMARKS
0	1	SS	2-50	Very loose, brownish black PEAT to 6", then brown SAND, fine to coarse, 5% granule, wood fragment blocked shoe	8" recovery Very slight odor OVA = 12.2 ppm
	2	SS	0-2 1-0	Very loose, brownish gray SAND, silt to coarse, 20% clay	12" recovery No odor OVA = 12.7 ppm
5	3	SS	2-4 3-4	Very loose, brownish gray CLAY to 5', then brown SAND, fine to coarse, well sorted coarse	20" recovery No odor OVA = 14.6 ppm
	4	SS	3-4 4-4	Very loose, same as above	24" recovery No odor OVA = 16.2 ppm
	5	SS	1-1 1-1	Very loose, same as above to 9', then PEAT, 20% clay	14" recovery No odor OVA = 16.2 ppm
10	6	SS	2-2 2-2	Very loose, brownish black clayey PEAT, 35% clay	18" recovery No odor OVA =13.4 ppm TD = 12 feet
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TEST BORING LOG

BORING NO. MW-24

PROJECT: SOUTHERN WOOD PIEDMONT-WILMINGTON		SHEET NO. 1 OF 1	
CLIENT: CHUCK DAVIS	DATE FINISHED	10-5-92	JOB NO. 530-06-503
BORING CONTRACTOR: ETE	DRILLER	T. COPPIN	ELEVATION 3.58
RIG USED ATV MUD ROTARY	INSPECTOR	G. KUNTZ	DATE STARTED 10-5-92

WELL CONSTRUCTION: GROUT; 2" PVC; GROUT; CLAY; PLUG; SAND PACK; SAND PACK

DEPTH FEET	SAMPLE No.	TYPE	BLOWS PER 6"	CLASSIFICATION	REMARKS
0	1	SS	6-8, 8-7	Loose, dark brown with black SAND, silt to coarse, 10% clay, 10% organics, 2% small pebble	18" recovery; No odor; OVA = 36.2 ppm
	2	SS	7-9, 7-9	Loose, light brown SAND, fine to coarse, 5% clay, trace small pebble	18" recovery; No odor; OVA = 47.1 ppm
5	3	SS	5-6, 4-3	Very loose, light grayish brown SAND, very fine to medium, 5% heavy minerals	12" recovery; No odor; OVA = 52.9 ppm
	4	SS	3-3, 3-2	Very loose, brown SAND, fine to coarse	12" recovery; Very slight odor; OVA = 105 ppm
	5	SS	4-2, 2-1	Very loose, same as above	6" recovery; Very slight odor; OVA = 71.3 ppm
10	6	SS	4-3, 2-3	Very loose, same as above to 11.5 feet, then brownish black clayey PEAT, 35% clay	18" recovery; Very slight odor; OVA = 104 ppm; TD = 12 feet
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TEST BORING LOG

BORING NO. MW-24A

PROJECT: SOUTHERN WOOD PIEDMONT-WILMINGTON			SHEET NO. 1 OF 1
CLIENT: T.M. DAVIS	DATE FINISHED	11-1-93	JOB NO. 12-53015.00
BORING CONTRACTOR: ETE	DRILLER	LAYNE ENVIRONMENTAL	ELEVATION 3.64
RIG USED ATV MUD ROTARY	INSPECTOR	G. KUNTZ	DATE STARTED 10-28-93

WELL CONSTRUCTION: GROUT; 6" PVC; 2" PVC; 6" PVC; GROUT; CLAY; PLUG; SAND PACK; SAND PACK

DEPTH FEET	SAMPLE No.	TYPE	BLOWS PER 6"	CLASSIFICATION	REMARKS
0	1	PH		Very loose, brown SAND, fine to coarse	No odor OVA = 129 ppm
	2	PH		Very loose, same as above	Slight odor OVA = 148 ppm H20 at 3'
5	3	SS	2-2 1-2	Very loose, brown SAND, fine to coarse, multiple 1/4" to 1/8" brown clay laminae	14" recovery Slight odor OVA = 204 ppm
	4	SS	2-3 3-4	Loose, brown SAND as above to 7', then dark gray CLAY to 7.5', then brown SAND, fine to coarse. Visual in lower sand.	24" recovery Moderate odor OVA = 199 ppm
	5	SS	4-5 5-8	Firm, dark gray CLAY with 1/4" wood laminae to 9', then brown SAND, fine to coarse, 1/8" coarse grained sand laminae. Visual staining in wood laminae and in lower sand.	24" recovery Strong odor OVA = 308 ppm
10	6	SS	2-3 2-2	Very loose, brown SAND, fine to coarse to 12', few 1/4" clay laminae	12" recovery Moderate odor OVA = 191 ppm
	7	SS	3-4 4-2	Loose, brownish black peaty CLAY, 30% peat	18" recovery Slight odor OVA = 207 ppm
15	8	SS	2-4 3-5	Loose, brownish black peaty CLAY, 30% peat	10" recovery Very slight odor OVA = 175 ppm
	9	SS	2-4 4-3	No recovery. Grout in spoon. Blow counts suggest PEAT.	Pit casing to 16'
	10	SS	2-8 8-9	Same as above	
20	11	SS	1-1 1-1	Very loose, dark brown peaty CLAY, 25% wood fragments	6" recovery No odor OVA = 58.4 ppm
	12	SS	1-1 1-3	Very loose, dark brown peaty CLAY, 25% wood	18" recovery No odor OVA = 31.8 ppm
25	13	SS	3-4 8-11	Firm, same as above	18" recovery No odor OVA = 52.3 ppm
	14	SS	2-2 4-7	Firm, same to 27', then sharp contact to brown SAND, fine to coarse, 5% very coarse, 5% wood	16" recovery No odor OVA = 54.0 ppm
30	15	SS	2-4 6-8	Firm, brown SAND, fine to coarse, trace very coarse to granule	18" recovery No odor OVA = 45.3 ppm
35	16	SS	3-4 4-6	Loose, brown SAND, very fine to medium, 20% silt	18" recovery No odor OVA = 31.6 ppm
40	17	SS	6-8 8-10	Firm, brown SAND, fine to very coarse, 5% small pebble to 40.5', then sharp contact to olive gray CLAY, 5% phosphate and glauconite, 2% mollusc shells	24" recovery No odor OVA = 11.8 ppm TD = 42'
45					
50					

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TEST BORING LOG

BORING NO. MW-24R

PROJECT: SOUTHERN WOOD PIEDMONT-WILMINGTON		SHEET NO. 1 OF 1
CLIENT: T.M. DAVIS	DATE FINISHED 11-12-93	JOB NO. 12-53015.00
BORING CONTRACTOR: ETE	DRILLER LAYNE ENVIRONMENTAL	ELEVATION 3.77
RIG USED ATV MUD ROTARY	INSPECTOR G. KUNTZ	DATE STARTED 11-12-93

WELL CONSTRUCTION: GROUT; 2" PVC; GROUT; CLAY; PLUG; SAND PACK; SAND PACK

DEPTH FEET	SAMPLE No.	TYPE	BLOWS PER 6"	CLASSIFICATION	REMARKS
0	1	PH		Very loose, brown SAND, fine to very coarse, 10% very coarse	Slight odor OVA = 2212 ppm
	2	PH		Very loose, grayish brown SAND, fine to coarse	Slight odor OVA = 767 ppm
5	3	SS	2-1 / 2-1	Very loose, grayish brown SAND, fine to coarse to 5.5', then brownish black CLAY	24" recovery Slight odor OVA = 570 ppm
	4	SS	1-3 / 2-2	Very loose, same CLAY to 7', then brown SAND, fine to coarse. Visual staining beginning in sand at 7'.	18" recovery Moderate odor OVA = 682 ppm
	5	SS	2-3 / 3-4	Loose, brown SAND, fine to coarse. No visual.	8" recovery Moderate odor OVA = 699 ppm
10	6	SS	3-4 / 2-2	Very loose, grayish brown SAND, fine to coarse. No visual.	24" recovery Moderate odor OVA = 640 ppm
	7	SS	2-2 / 3-3	Loose, grayish brown SAND, fine to coarse to 13', then sharp contact to brownish black, clayey, PEAT. Visual staining in SAND, no visual in peat.	24" recovery Moderate odor OVA = 463 ppm TD = 14'

15, 20, 25, 30, 35, 40, 45, 50

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TEST BORING LOG

BORING NO. MW-25

PROJECT: SOUTHERN WOOD PIEDMONT-WILMINGTON		SHEET NO. 1 OF 1	
CLIENT: CHUCK DAVIS	DATE FINISHED	10-8-92	JOB NO. 530-06-503
BORING CONTRACTOR: ETE	DRILLER	J. MASSEY	ELEVATION 1.78
RIG USED HAND AUGER	INSPECTOR	G. KUNTZ	DATE STARTED 10-8-92

WELL CONSTRUCTION: CLAY; 2" PVC CASING; PLUG; NATURAL PACK; NATURAL PACK

DEPTH FEET	SAMPLE: LITHOLOGY	No.	TYPE	BLOWS PER 6"	CLASSIFICATION	REMARKS
0		1	HA		Borehole was hand augered because well location is within a wetland area. Representative samples were not obtained during the augering process because the loose nature of the sediments prevented sample retrival.	
5					Sediments encountered are believed to be marsh mud to 2 feet, then loose brown sand to 13 feet, then the peat unit was encountered. The well was hand pushed to 13 feet using a well point and was constructed using a natural filter pack.	
10						
15						
20						
25						
30						
35						
40						
45						
50						

H:530MW25

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TEST BORING LOG

BORING NO. MW-26

PROJECT: SOUTHERN WOOD PIEDMONT-WILMINGTON		SHEET NO. 1 OF 1	
CLIENT: CHUCK DAVIS	DATE FINISHED	10-5-92	JOB NO. 530-06-503
BORING CONTRACTOR: ETE	DRILLER	T. COPPIN	ELEVATION 2.48
RIG USED ATV MUD ROTARY	INSPECTOR	G. KUNTZ	DATE STARTED 10-5-92

WELL CONSTRUCTION: GROUT; 2" STAINLESS STEEL; GROUT; CLAY; PLUG; SAND PACK; SAND PACK

SAMPLE No.	TYPE	BLOWS PER 6"	CLASSIFICATION	REMARKS
1	SS	7-6, 6-5	Loose, brown SAND, fine to coarse, poorly sorted	18" recovery, No odor, OVA = 13.5 ppm
2	SS	7-6, 6-6	Loose, brown SAND, silt to coarse, well sorted medium	18" recovery, No odor, OVA = 14.6 ppm
3	SS	3-3, 2-3	Very loose, brown SAND, very fine to coarse, poorly sorted	8" recovery, No odor, OVA = 14.7 ppm
4	SS	1-1, 0-1	Very loose, same as above	10" recovery, Very slight odor, OVA = 15.1 ppm
5	SS	1-1, 6-7	Loose, same as above	14" recovery, Creosote stained soil, OVA = 140 ppm
6	SS	4-4, 7-8	Loose, same as above	16" recovery, Creosote stained soil, OVA = 206 ppm
7	SS	3-7, 50	Loose, dark brown SAND, medium to coarse, 10% wood, wood blocked shoe	14" recovery, Creosote stained soil, OVA = 236 ppm
8	SS	2-1, 1-1	Very loose, no recovery, pebble blocked shoe	Creosote stained soils
9	SS	6-7, 9-8	Loose, dark blackish brown clayey PEAT grading to peaty CLAY, interval between 16' and 17' visually stained with creosote, no staining below 17'	18" recovery, Strong odor, OVA = 110 ppm, TD = 18 feet

DEPTH FEET: 0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50

H:530MW26

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TEST BORING LOG

BORING NO. MW-27

PROJECT: SOUTHERN WOOD PIEDMONT-WILMINGTON		SHEET NO. 1 OF 1	
CLIENT: T.M. DAVIS	DATE FINISHED 11-13-93	JOB NO. 12-53015.00	
BORING CONTRACTOR: ETE	DRILLER LAYNE ENVIRONMENTAL	ELEVATION 3.22	
RIG USED ATV MUD ROTARY	INSPECTOR G. KUNTZ	DATE STARTED 11-13-93	

WELL CONSTRUCTION: CLAY PLUG; SAND PACK; SAND PACK

DEPTH FEET	SAMPLE No.	TYPE	BLOWS PER 6"	CLASSIFICATION	REMARKS
0	1	PH		Very loose, dark brown SAND, fine to granule, 10% very coarse to granule. Diesel stained.	Moderate odor OVA = 411 ppm
	2	PH		Very loose, brown SAND, fine to very coarse, 5% very coarse. Little diesel staining.	Slight diesel odor OVA = 834 ppm 20" recovery
	3	SS	2-1 1-1	Very loose, same to 4.5' then grayish brown peaty CLAY, 25% peat. Diesel staining to 3.5'.	Very slight odor OVA = 1577 ppm 24" recovery
-5	4	SS	1-1 2-1	Very loose, brown SAND, fine to very coarse, 5% very coarse, diesel stained to 6', then dark gray CLAY. No staining in clay.	Very slight odor OVA = 1237 ppm 18" recovery
	5	SS	2-1 2-1	Very loose, CLAY as above, 10% peat	Very slight odor OVA = 417 ppm TD = 9'
-10					
-15					
-20					
-25					
-30					
-35					
-40					
-45					
-50					

ENVIRONMENTAL TECHNOLOGY ENGINEERING, INC.
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TEST BORING LOG

BORING NO. MW-28

PROJECT: SOUTHERN WOOD PIEDMONT-WILMINGTON		SHEET NO. 1 OF 1	
CLIENT: T.M. DAVIS	DATE FINISHED 11-10-93	JOB NO. 12-53015.00	
BORING CONTRACTOR: ETE	DRILLER LAYNE ENVIRONMENTAL	ELEVATION 2.97	
RIG USED ATV MUD ROTARY	INSPECTOR G. KUNTZ	DATE STARTED 11-10-93	

WELL CONSTRUCTION: GROUT; 2" PVC; GROUT; CLAY; PLUG; SAND PACK; SAND PACK

DEPTH FEET	SAMPLE No.	TYPE	BLOWS PER 6"	CLASSIFICATION	REMARKS
0	1	PH		Loose, blackish brown SAND, fine to coarse, poorly sorted, 15% organics	No odor OVA = 1285 ppm
	2	PH		Loose, brown SAND, fine to coarse	No odor OVA = 2630 ppm
5	3	SS	2-3 3-4	Loose, grayish brown SAND, silt to coarse, 5% clay	18" recovery No odor OVA = 801 ppm
	4	SS	3-2 2-3	Loose, dark brown SAND, fine to coarse, 10% clay, scattered brick fragments	18" recovery No odor OVA = 512 ppm
	5	SS	1-3 3-5	Loose, same as above	24" recovery No odor OVA = 556 ppm
10	6	SS	2-1 3-2	Loose, brown SAND, silt to coarse, well sorted medium, brick fragments	18" recovery No odor OVA = 306 ppm
	7	SS	2-1 3-2	Loose, brown SAND, silt to granule, 5% granule, 5% silt and clay, trace small to large pebble to 13.5', then PEAT, 20% clay	24" recovery No odor OVA = 362 ppm TD = 14'

15, 20, 25, 30, 35, 40, 45, 50

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TEST BORING LOG

BORING NO. MW-28A

PROJECT: SOUTHERN WOOD PIEDMONT-WILMINGTON			SHEET NO. 1 OF 1
CLIENT: T.M. DAVIS	DATE FINISHED	11-10-93	JOB NO. 12-53015.00
BORING CONTRACTOR: ETE	DRILLER	LAYNE ENVIRONMENTAL	ELEVATION 3.26
RIG USED ATV MUD ROTARY	INSPECTOR	G. KUNTZ	DATE STARTED 11-9-93

WELL CONSTRUCTION: GROUT; 6" PVC; 2" PVC; 6" PVC; GROUT; CLAY; PLUG; SAND PACK; SAND PACK

DEPTH FEET	SAMPLE No.	TYPE	BLOWS PER 6"	CLASSIFICATION	REMARKS
0	1	PH		Loose, blackish brown SAND, fine to coarse, poorly sorted, 15% organics	No odor OVA = 1285 ppm
	2	PH		Loose, brown SAND, fine to coarse	No odor OVA = 2630 ppm
5	3	SS	2-3 3-4	Loose, grayish brown SAND, silt to coarse, 5% clay	18" recovery No odor OVA = 801 ppm
	4	SS	3-2 2-3	Loose, dark brown SAND, fine to coarse, 10% clay, scattered brick fragments	18" recovery No odor OVA = 512 ppm
	5	SS	1-3 3-5	Loose, same as above	24" recovery No odor OVA = 556 ppm
10	6	SS	2-1 3-2	Loose, brown SAND, silt to coarse, well sorted medium, brick fragments	18" recovery No odor OVA = 306 ppm
	7	SS	2-1 3-2	Loose, brown SAND, silt to granule, 5% granule, 5% silt and clay, trace small to large pebble to 13.5', then PEAT, 20% clay	24" recovery No odor OVA = 362 ppm
15	8	SS	2-1 2-3	Loose, blackish brown peaty CLAY, 25% peat	24" recovery No odor OVA = 296 ppm
	9	SS	2-3 2-4	Loose, same as above, 6" diameter wood fragment between 17.5' and 18'	24" recovery No odor OVA = 232 ppm Pit casing to 18'
20	10	SS	3-4 4-6	Loose, brown to black SAND, fine to coarse, medium dominant, 15% peat	12" recovery No odor OVA = 244 ppm
	11	SS	6-8 5-4	Loose, brown to black SAND, fine to coarse, medium dominant	20" recovery No odor OVA = 337 ppm
25	12	SS	3-4 4-5	Loose, same to 25', then sharp contact to gray CLAY, wood fragments at contact	24" recovery No odor OVA = 274 ppm
	13	SS	4-5 3-8	Firm, gray CLAY to 27', then gradational contact to gray silty SAND, silt to medium, 30% silt, 5% phosphate grains, fining downward	24" recovery No odor OVA = 267 ppm
	14	SS	6-9 11-13	Firm, greenish gray silty SAND, silt to medium, 30% silt, 5% phosphate	24" recovery No odor OVA = 123 ppm
30	15	SS	10-15 23-35	Very dense, greenish gray silty SAND, silt to medium, 25% silt, 5% phosphate	18" recovery Very slight odor OVA = 290 ppm
	16	SS	8-8 9-5	Firm, grayish brown SAND, very fine to coarse	12" recovery No odor OVA = 84.1 ppm
35	17	SS	3-7 7-8	Firm, brown SAND, very fine to coarse	16" recovery No odor OVA = 162 ppm
	18	SS	6-5 9-10	Firm, brown SAND, very fine to coarse	12" recovery No odor OVA = 137 ppm
	19	SS	8-7 7-16	Firm, same SAND to 40', then greenish gray silty CLAY	24" recovery No odor OVA = 181 ppm TD = 40'
40					
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HYDROGEOLOGIC SERVICES

TEST BORING LOG

BORING NO. MW-29

PROJECT: SOUTHERN WOOD PIEDMONT-WILMINGTON		SHEET NO. 1 OF 1
CLIENT: T.M. DAVIS	DATE FINISHED 11-12-93	JOB NO. 12-53015.00
BORING CONTRACTOR: ETE	DRILLER LAYNE ENVIRONMENTAL	ELEVATION 3.19
RIG USED ATV MUD ROTARY	INSPECTOR G. KUNTZ	DATE STARTED 11-12-93

WELL CONSTRUCTION: CLAY; PLUG; SAND PACK; SAND PACK

DEPTH FEET	SAMPLE No.	TYPE	BLOWS PER 6"	CLASSIFICATION	REMARKS
0	1	PH		Very loose, blackish brown organic SAND and PEAT to 1', then brown SAND, fine to very coarse, medium dominant	No odor OVA = 210 ppm
	2	PH		Very loose, brown SAND, very fine to coarse, fine dominant	No odor OVA = 183 ppm
5	3	SS	2-2 3-3	Loose, light gray SAND, silt to medium, fine dominant, 20% silt to 5.5', then dark brown CLAY, 20% peat	12" recovery No odor OVA = 111 ppm
	4	SS	2-4 2-1	Very loose, dark brown CLAY, 20% peat	18" recovery No odor OVA = 133 ppm
	5	SS	2-1 1-3	Very loose, large wood fragment blocked shoe.	4" recovery No odor OVA = 53.2 ppm TD = 10'
10					
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25					
30					
35					
40					
45					
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ENVIRONMENTAL TECHNOLOGY ENGINEERING, INC. CONSULTING ENGINEERS, SURVEYORS AND HYDROGEOLOGISTS HYDROGEOLOGIC SERVICES		TEST BORING LOG BORING NO. MW-29A
PROJECT: SOUTHERN WOOD PIEDMONT-WILMINGTON		SHEET NO. 1 OF 1
CLIENT: T.M. DAVIS	DATE FINISHED 11-9-93	JOB NO. 12-53015.00
BORING CONTRACTOR: ETE	DRILLER LAYNE ENVIRONMENTAL	ELEVATION 3.15
RIG USED ATV MUD ROTARY	INSPECTOR G. KUNTZ	DATE STARTED 10-30-93

WELL CONSTRUCTION: 6" PVC; 2" PVC; GROUT; CLAY; SAND PACK; 6" PVC; GROUT; PLUG; SAND PACK

DEPTH FEET	SAMPLE No.	TYPE	BLOWS PER 6"	CLASSIFICATION	REMARKS
0	1	PH		Very loose, blackish brown organic SAND and PEAT to 1', then brown SAND, fine to very coarse, medium dominant	No odor OVA = 210 ppm
	2	PH		Very loose, brown SAND, very fine to coarse, fine dominant	No odor OVA = 183 ppm
5	3	SS	2-2 3-3	Loose, light gray SAND, silt to medium, fine dominant, 20% silt to 5.5', then dark brown CLAY, 20% peat	12" recovery No odor OVA = 111 ppm
	4	SS	2-4 2-1	Very loose, dark brown CLAY, 20% peat	18" recovery No odor OVA = 133 ppm
	5	SS	2-1 1-3	Very loose, large wood fragment blocked shoe	4" recovery No odor OVA = 53.2 ppm Pit casing to 10'
10	6	SS	2-1 1-3	Grout in spoon. No recovery.	
15	7	SS	2-2 2-4	Loose, dark gray CLAY, 10% peat	18" recovery No odor OVA = 32.7 ppm
	8	SS	2-1 1-2	Very loose, dark gray CLAY, 5% peat	24" recovery No odor OVA = 40.7 ppm
	9	SS	3-2 1-2	Very loose, dark grayish brown peaty CLAY, 25% peat	24" recovery No odor OVA = 37.8 ppm
20	10	SS	3-1 1-2	Very loose, same as above	12" recovery No odor OVA = 44.5 ppm
	12	SS	2-4 4-3	Loose, same to 22.5', then sharp contact to dark brown SAND, silt to medium, 15% peat	20" recovery No odor OVA = 49.5 ppm
25	13	SS	2-4 3-5	Loose, alternating peaty CLAY, 25% peat and brown SAND, fine to coarse to 25', then brown SAND, fine to coarse	18" recovery No odor OVA = 46.8 ppm
	14	SS	4-3 3-7	Loose, brown SAND, fine to coarse, medium dominant	14" recovery No odor OVA = 45.9 ppm
30	15	SS	3-4 4-5	Loose, brownish black peaty CLAY, 25% peat	18" recovery No odor OVA = 46.0 ppm
	16	SS	2-3 1-3	Very loose, brownish black clayey SAND, silt to medium, 25% clay, 5% peat to 33.5' then brown SAND, fine to granule, 10% very coarse to granule	20" recovery Very slight odor OVA = 49.4 ppm
35	17	SS	4-5 3-5	Loose, brown pebbly SAND, fine to granule, 25% granule to small pebble, 1/4" gray clay laminae at 35.5'	15" recovery Very slight odor OVA = 50.6 ppm
	18	SS	6-5 3-1	Very loose, brown SAND, fine to granule, 5% granule alternating with a dark brown silty SAND, 25% silt, 20% peat	24" recovery Moderate odor OVA = 53.4 ppm
	19	SS	3-7 9-5	Firm, brown SAND to 38', then olive gray marine silty CLAY, 25% silt	24" recovery No odor OVA = 57.6 ppm TD = 40'
40					
45					
50					

ETE	ENVIRONMENTAL TECHNOLOGY ENGINEERING, INC. CONSULTING ENGINEERS, SURVEYORS AND HYDROGEOLOGISTS HYDROGEOLOGIC SERVICES	TEST BORING LOG BORING NO. MW-30

PROJECT: SOUTHERN WOOD PIEDMONT-WILMINGTON		SHEET NO. 1 OF 1
CLIENT: T.M. DAVIS	DATE FINISHED 11-12-93	JOB NO. 12-53015.00
BORING CONTRACTOR: ETE	DRILLER LAYNE ENVIRONMENTAL	ELEVATION 4.07
RIG USED ATV MUD ROTARY	INSPECTOR G. KUNTZ	DATE STARTED 11-12-93

WELL CONSTRUCTION: GROUT, CLAY, SAND PACK; GROUT, PLUG, SAND PACK

DEPTH FEET	SAMPLE No.	TYPE	BLOWS PER 6"	CLASSIFICATION	REMARKS
0	1	PH		Very loose, brown SAND, fine to very coarse, coarse dominant	No odor OVA = 320 ppm
	2	PH		Very loose, brown SAND, fine to coarse	No odor OVA = 357 ppm
5	3	SS	2-1 1-3	Very loose, brown SAND, very fine to coarse, few 1/8" clay laminae	24" recovery No odor OVA = 345 ppm
	4	SS	2-4 4-3	Loose, brown SAND, fine to coarse, thin organic laminae	20" recovery No odor OVA = 296 ppm
	5	SS	2-4 4-3	Loose, same as above to 9', then sharp contact to brownish black peaty CLAY, 25% peat	24" recovery Moderate odor OVA = 380 ppm TD = 10'
10					
15					
20					
25					
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35					
40					
45					
50					

ATTACHMENT E

Phase III Groundwater Elevation Summary Table

PHASE III GROUNDWATER ELEVATION MEASUREMENT SUMMARY
SOUTHERN WOOD PIEDMONT FACILITY
WILMINGTON, NORTH CAROLINA

WELL	RISER ELEVATION	DATE	DEPTH TO WATER	GROUNDWATER ELEVATION
MW-6	5.07	11/16/93	2.87	2.20
		11/19/93	2.93	2.14
		11/19/93	2.94	2.13
		11/19/93	2.92	2.15
MW-7	6.03	11/16/93	4.30	1.73
		11/19/93	4.32	1.71
		11/19/93	4.30	1.73
		11/19/93	4.20	1.83
MW-8	6.80	11/16/93	4.70	2.10
		11/19/93	4.95	1.85
		11/19/93	4.74	2.06
		11/19/93	4.70	2.10
MW-8A	6.43	11/16/93	4.52	1.91
		11/19/93	4.26	2.17
		11/19/93	3.87	2.56
		11/19/93	3.73	2.70
MW-9	6.43	11/16/93	4.22	2.21
		11/19/93	4.35	2.08
		11/19/93	4.29	2.14
		11/19/93	4.25	2.18
MW-10	7.41	11/16/93	5.05	2.36
		11/19/93	5.15	2.26
		11/19/93	5.13	2.28
		11/19/93	5.12	2.29
MW-11	8.02	11/16/93	5.66	2.36
		11/19/93	5.71	2.31
		11/19/93	5.69	2.33
		11/19/93	5.67	2.35
MW-11A	6.38	11/16/93	4.39	1.99
		11/19/93	4.28	2.10
		11/19/93	4.23	2.15
		11/19/93	4.16	2.22
MW-11B	6.26	11/16/93	4.23	2.03
		11/19/93	4.16	2.10
		11/19/93	4.11	2.15
		11/19/93	4.04	2.22
MW-12	8.22	11/16/93	5.60	2.62
		11/19/93	5.89	2.33
		11/19/93	5.84	2.38
		11/19/93	5.83	2.39
MW-13	6.97	11/16/93	4.97	2.00
		11/19/93	4.96	2.01
		11/19/93	4.90	2.07
		11/19/93	4.88	2.09

PHASE III GROUNDWATER ELEVATION MEASUREMENT SUMMARY
SOUTHERN WOOD PIEDMONT FACILITY
WILMINGTON, NORTH CAROLINA

WELL	RISER ELEVATION	DATE	DEPTH TO WATER	GROUNDWATER ELEVATION
MW-14	6.30	11/16/93	4.75	1.55
		11/19/93	4.90	1.40
		11/19/93	4.82	1.48
		11/19/93	4.81	1.49
MW-14A	5.05	11/16/93	3.26	1.79
		11/19/93	3.19	1.86
		11/19/93	3.21	1.84
		11/19/93	3.19	1.86
MW-15	7.07	11/16/93	4.73	2.34
		11/19/93	4.84	2.23
		11/19/93	4.69	2.38
		11/19/93	4.79	2.28
MW-16	7.69	11/16/93	5.64	2.05
		11/19/93	5.71	1.98
		11/19/93	5.54	2.15
		11/19/93	5.65	2.04
MW-17	7.65	11/16/93	5.53	2.12
		11/19/93	5.60	2.05
		11/19/93	5.47	2.18
		11/19/93	5.60	2.05
MW-18	6.61	11/16/93	4.80	1.81
		11/19/93	4.81	1.80
		11/19/93	4.73	1.88
		11/19/93	4.54	2.07
MW-19	5.44	11/16/93	3.24	2.20
		11/19/93	3.18	2.26
		11/19/93	3.17	2.27
		11/19/93	3.14	2.30
MW-19A	5.25	11/16/93	3.28	1.97
		11/19/93	3.14	2.11
		11/19/93	3.13	2.12
		11/19/93	3.04	2.21
MW-20	5.44	11/16/93	3.44	2.00
		11/19/93	3.59	1.85
		11/19/93	3.56	1.88
		11/19/93	3.58	1.86
MW-20A	5.23	11/16/93	3.15	2.08
		11/19/93	3.08	2.15
		11/19/93	3.08	2.15
		11/19/93	3.05	2.18
MW-21	5.34	11/16/93	3.82	1.52
		11/19/93	3.89	1.45
		11/19/93	3.89	1.45
		11/19/93	3.89	1.45

PHASE III GROUNDWATER ELEVATION MEASUREMENT SUMMARY
SOUTHERN WOOD PIEDMONT FACILITY
WILMINGTON, NORTH CAROLINA

WELL	RISER ELEVATION	DATE	DEPTH TO WATER	GROUNDWATER ELEVATION
MW-22	5.26	11/16/93	3.75	1.51
		11/19/93	3.64	1.62
		11/19/93	3.10	2.16
		11/19/93	3.15	2.11
MW-22A	5.32	11/16/93	3.37	1.95
		11/19/93	3.18	2.14
		11/19/93	3.09	2.23
		11/19/93	3.05	2.27
MW-23	4.96	11/16/93	2.86	2.10
		11/19/93	2.81	2.15
		11/19/93	2.86	2.10
		11/19/93	2.80	2.16
MW-24	5.98	11/16/93	3.71	2.27
		11/19/93	3.78	2.20
		11/19/93	3.74	2.24
		11/19/93	3.71	2.27
MW-24A	5.81	11/16/93	3.88	1.93
		11/19/93	3.75	2.06
		11/19/93	3.76	2.05
		11/19/93	3.67	2.14
MW-25	4.96	11/16/93	2.17	2.79
		11/19/93	3.04	1.92
		11/19/93	2.93	2.03
		11/19/93	2.89	2.07
MW-26	4.91	11/16/93	4.14	0.77
		11/19/93	4.70	0.21
		11/19/93	4.62	0.29
		11/19/93	4.73	0.18
MW-27	5.41	11/16/93	2.41	3.00
		11/19/93	2.46	2.95
		11/19/93	2.47	2.94
		11/19/93	2.46	2.95
MW-28	5.18	11/16/93	4.35	0.83
		11/19/93	4.38	0.80
		11/19/93	4.33	0.85
		11/19/93	4.32	0.86
MW-28A	5.47	11/16/93	4.12	1.35
		11/19/93	4.01	1.46
		11/19/93	4.06	1.41
		11/19/93	4.02	1.45
MW-29	5.32	11/16/93	4.29	1.03
		11/19/93	4.34	0.98
		11/19/93	4.36	0.96
		11/19/93	4.36	0.96

PHASE III GROUNDWATER LEVEL MEASUREMENT SUMMARY
SOUTHERN WOOD PIEDMONT FACILITY
WILMINGTON, NORTH CAROLINA

WELL	RISER ELEVATION	DATE	DEPTH TO WATER	GROUNDWATER ELEVATION
MW-29A	5.14	11/16/93	3.41	1.73
		11/19/93	3.32	1.82
		11/19/93	3.35	1.79
		11/19/93	3.31	1.83
MW-30	6.26	11/16/93	4.44	1.82
		11/19/93	4.51	1.75
		11/19/93	4.51	1.75
		11/19/93	4.51	1.75
Staff Gauge Cape Fear	5.93	11/16/93	-0.1	-0.83
		11/19/93	1.13	0.40
		11/19/93	4.38	3.65
		11/19/93	5.0	4.27
Staff Gauge North Channel	6.64	11/16/93	0.24	0.22
		11/19/93	0.35	0.33
		11/19/93	0.26	0.24
		11/19/93	0.26	0.24
Staff Gauge South Channel	2.13	11/16/93	0.2	-1.18
		11/19/93	1.67	0.47
		11/19/93	1.04	-0.16
		11/19/93	1.21	0.01

NOTE: Top of Staff Gauge at Cape Fear and North Channel is 6.66
Top of Staff Gauge at South Channel is 3.33
Cape Fear River Elevation = 5.93-(6.66-Depth to water)
North Channel Elevation = 6.64-(6.66-Depth to water)
South Channel Elevation = 2.13-(3.33-Depth to water)

Phase III Vertical Hydraulic Gradient Summary Table

PHASE III VERTICAL HYDRAULIC GRADIENT SUMMARY TABLE
SOUTHERN WOOD PIEDMONT FACILITY
WILMINGTON, NORTH CAROLINA

WELL PAIR	DATE	TIDE	GW ELEVATION UPPER AQUIFER	GW ELEVATION LOWER AQUIFER	MID SCREEN ELEV. UPPER AQUIFER	MID SCREEN ELEV. LOWER AQUIFER	VERT. HYDRAULIC GRADIENT
MW-8/MW-8A	11/93	Low	2.10	1.91	-9.86	-24.13	+0.013
		1/4	1.85	2.17	-9.86	-24.13	-0.022
		3/4	2.06	2.56	-9.86	-24.13	-0.035
		High	2.10	2.70	-9.86	-24.13	-0.042
MW-11/MW-11A	11/93	Low	2.36	1.99	-1.19	-27.29	+0.014
		1/4	2.31	2.10	-1.19	-27.29	+0.008
		3/4	2.33	2.15	-1.19	-27.29	+0.007
		High	2.35	2.22	-1.19	-27.29	+0.005
MW-14/MW-14A	11/93	Low	1.55	1.79	-8.38	-25.89	-0.014
		1/4	1.40	1.86	-8.38	-25.89	-0.026
		3/4	1.48	1.84	-8.38	-25.89	-0.021
		High	1.49	1.86	-8.38	-25.89	-0.021
MW-19/MW-19A	11/93	Low	2.20	1.97	-7.18	-25.52	+0.013
		1/4	2.26	2.11	-7.18	-25.52	+0.008
		3/4	2.27	2.12	-7.18	-25.52	+0.008
		High	2.30	2.21	-7.18	-25.52	+0.005
MW-20/MW-20A	11/93	Low	2.00	2.08	-6.63	-25.38	-0.004
		1/4	1.85	2.15	-6.63	-25.38	-0.016
		3/4	1.88	2.15	-6.63	-25.38	-0.014
		High	1.86	2.18	-6.63	-25.38	-0.017
MW-22/MW-22A	11/93	Low	1.51	1.95	-10.59	-26.29	-0.028
		1/4	1.62	2.14	-10.59	-26.29	-0.033
		3/4	2.16	2.23	-10.59	-26.29	-0.004
		High	2.11	2.27	-10.59	-26.29	-0.010
MW-24/MW-24A	11/93	Low	2.27	1.93	-7.13	-28.14	+0.016
		1/4	2.20	2.06	-7.13	-28.14	+0.007
		3/4	2.24	2.05	-7.13	-28.14	+0.009
		High	2.27	2.14	-7.13	-28.14	+0.006
MW-28/MW-28A	11/93	Low	0.83	1.35	-5.60	-19.92	-0.036
		1/4	0.80	1.46	-5.60	-19.92	-0.046
		3/4	0.85	1.41	-5.60	-19.92	-0.039
		High	0.86	1.45	-5.60	-19.92	-0.041
MW-29/MW-29A	11/93	Low	1.03	1.73	-1.54	-33.33	-0.022
		1/4	0.98	1.82	-1.54	-33.33	-0.026
		3/4	0.96	1.79	-1.54	-33.33	-0.026
		High	0.96	1.83	-1.54	-33.33	-0.027

NOTE: Vertical Hydraulic Gradient = $\frac{\text{Upper Aquifer Elevation} - \text{Lower Aquifer Elevation}}{\text{Upper Aquifer Mid Screen Elevation} - \text{Lower Aquifer Mid Screen Elevation}}$

- Upward Vertical Hydraulic Gradient
+ Downward Vertical Hydraulic Gradient
All Measurements in Feet
Vertical Hydraulic Gradient in ft/ft

ATTACHMENT F

Wilmington Site-Specific Soil Constituent List

SITE-SPECIFIC SOIL SAMPLE LIST
SOUTHERN WOOD PIEDMONT FACILITY
WILMINGTON, NORTH CAROLINA

METALS

Arsenic
Copper
Chromium

SEMI-VOLATILES

Acenaphthene
Benzo(a)anthracene
Benzo(b)fluoranthene
Bis(2-chloroethyl)ether
4-chloro-3-methylphenol
Chrysene
2,4-dimethylphenol
Fluoranthene
Naphthalene
Phenanthrene
Tetrachlorophenol
2,4,6-trichlorophenol
Anthracene
Benzo(a)pyrene
Benzo(k)fluoranthene
Carbazole
2-chlorophenol
Dibenzo(a,h)anthracene
2,4-dinitrophenol
Indeno(1,2,3-cd)pyrene
Pentachlorophenol
Phenol
2,4,5-trichlorophenol

VOLATILES

Benzene
Bromomethane
Chlorobenzene
2-chloroethylvinylether
Cis-1,3-dichloropropene
1,2-dibromomethane (Edb)
1,1-dichloroethane
1,1-dichloroethene
1,2-dichloropropane
Fluorotrichloromethane
Methyl-T-Butyl Ether (Mtbe)
1,1,2,2-tetrachloroethane
Trans-1,2-dichloroethene
1,1,2-trichloroethane
Vinyl Chloride
Bromodichloromethane
Carbon Tetrachloride
Chloroethane
Chloromethane
Dibromochloromethane
Dichlorodifluoromethane
1,2-dichloroethane
Dichloromethane
Ethyl benzene
M/P-Xylene
O-Xylene
Toluene
1,1,1-trichloroethane
Trichloroethene

Soil Sample Collection Summary Sheets

SOIL SAMPLE COLLECTION SHEET

Project Number: 12-53015.00 Date: 11/19/93

Sampled By: Kuntz Time: 10:50

Sampling Point Identification: SS-10A

Site Name/City/County: SWP-Wilmington

Weather Conditions: Clear 65

Sample Type: Soil

Sampling Method: Stainless spoon and stainless steel hand auger

Splits/Spikes/Duplicates:

Sampling Containers: (Number/Size/Type) 1/500ml/G; 2/250ml/G

Appearance of Sample: Dark Brown Sand. No odor or visual staining

Reason for Sampling: Phase III Assessment

Lab Performing Analysis: Savannah Labs

Respiratory Protection: None

SOIL SAMPLE COLLECTION SHEET

Project Number: 12–53015.00 Date: 11/19/93

Sampled By: Kuntz Time: 11:30

Sampling Point Identification: Roll–off

Site Name/City/County: SWP–Wilmington

Weather Conditions: Clear 65

Sample Type: Soil

Sampling Method: Stainless spoon and stainless steel hand auger

Splits/Spikes/Duplicates:

Sampling Containers: (Number/Size/Type) 4/500ml/G

Appearance of Sample: Brown sand and clay

Reason for Sampling: Phase III Assessment

Lab Performing Analysis: Savannah Labs

Respiratory Protection: None

Phase III Soil Sample Parameter Summary Table

Phase III Roll-Off Composite TCLP Analysis Summary Table

PHASE III SOIL SAMPLE PARAMETER SUMMARY TABLE
SOUTHERN WOOD PIEDMONT FACILITY
WILMINGTON, NORTH CAROLINA

ROLLOFF – TCLP ANALYSIS

PARAMETER	DL*	R*
Arsenic	0.20	ND
Chromium	0.05	ND
Lead	0.20	ND
Mercury	0.02	ND
Benzene	0.02	ND
Methyl ethyl ketone	0.05	ND
Cresol (ortho)	0.05	ND
Cresol m & p	0.05	ND
Hexachlorobenzene	0.05	ND
Pentachlorophenol	0.25	ND
Pyridine	1.00	ND
2,4,5–Trichlorophenol	0.05	ND
2,4,6–Trichlorophenol	0.05	ND

NOTE: All units in mg/l
DL = Laboratory Detection Limit
R = Laboratory Analytical Result

Phase III Soil Sample Laboratory Analytical Data and QA/QC

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Ms. Sandra Watson
Southern Wood Piedmont (WI)
P.O. Box 5477, I-85 and Sigsbee Rd.
Spartanburg, SC 29304

Project: Wilmington
Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE SAMPLED
46613-1	SS-10A (# 11504)	11-19-93

PARAMETER	46613-1
Semivolatile Organics (8270)	
bis(2-Chloroethyl)ether, mg/kg dw	ND
Naphthalene, mg/kg dw	ND
Acenaphthene, mg/kg dw	3.3
Phenanthrene, mg/kg dw	ND
Anthracene, mg/kg dw	ND
Fluoranthene, mg/kg dw	15
Chrysene, mg/kg dw	9.0
Benzo(a)Anthracene, mg/kg dw	7.3
Benzo(b)fluoranthene, mg/kg dw	6.0
Benzo(k)fluoranthene, mg/kg dw	2.1
Benzo(a)pyrene, mg/kg dw	2.6
Indeno(1,2,3-cd)pyrene, mg/kg dw	ND
Dibenz(a,h)anthracene, mg/kg dw	ND
2-Chlorophenol, mg/kg dw	ND
Phenol, mg/kg dw	ND
2,4-Dimethylphenol, mg/kg dw	ND
2,4,6-Trichlorophenol, mg/kg dw	ND
4-Chloro-3-methylphenol, mg/kg dw	ND
2,4-Dinitrophenol, mg/kg dw	ND
Pentachlorophenol, mg/kg dw	ND
2,4,5-Trichlorophenol, mg/kg dw	ND
Carbazole, mg/kg dw	ND
Tetrachlorophenols, mg/kg dw	ND

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE SAMPLED
46613-1	SS-10A (# 11504)	11-19-93

PARAMETER	46613-1
Volatiles by GC/MS	
Chloromethane, mg/kg dw	ND
Bromomethane, mg/kg dw	ND
Vinyl Chloride, mg/kg dw	ND
Chloroethane, mg/kg dw	ND
Methylene Chloride (Dichloromethane), mg/kg dw	ND
1,1-Dichloroethene, mg/kg dw	ND
1,1-Dichloroethane, mg/kg dw	ND
Trans-1,2-Dichloroethylene, mg/kg dw	ND
1,2-Dichloroethane, mg/kg dw	ND
1,1,1-Trichloroethane, mg/kg dw	ND
Carbon Tetrachloride, mg/kg dw	ND
Bromodichloromethane, mg/kg dw	ND
1,1,2,2-Tetrachloroethane, mg/kg dw	ND
1,2-Dichloropropane, mg/kg dw	ND
Trichloroethene, mg/kg dw	ND
Dibromochloromethane, mg/kg dw	ND
1,1,2-Trichloroethane, mg/kg dw	ND
Benzene, mg/kg dw	ND
Cis-1,3-Dichloropropene, mg/kg dw	ND
2-Chloroethylvinyl Ether, mg/kg dw	ND
Toluene, mg/kg dw	ND
Chlorobenzene, mg/kg dw	ND
Ethylbenzene, mg/kg dw	ND

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Project: Wilmington
Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE SAMPLED
46613-1	SS-10A (# 11504)	11-19-93

PARAMETER	46613-1
o-Xylene, mg/kg dw	ND
m&p-Xylene, mg/kg dw	ND
1,2-Dibromoethane (EDB) , mg/kg dw	ND
Methyl-Tert-Butyl-Ether (MTBE), mg/kg dw	ND
Fluorotrichloromethane, mg/kg dw	ND
Dichlorodifluoromethane, mg/kg dw	ND
Arsenic (7060), mg/kg dw	13
Chromium (6010), mg/kg dw	38
Copper (6010), mg/kg dw	34
Percent Solids, %	24

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , SOLID OR SEMISOLID SAMPLES	DATE SAMPLED
46613-2	Rolloff (# 11483)	11-19-93

PARAMETER	46613-2
Arsenic (TCLP), mg/l	ND
Chromium (TCLP), mg/l	ND
Lead (TCLP), mg/l	ND
Mercury (TCLP - 7470), mg/l	ND
Benzene (TCLP), mg/l	ND
Methyl ethyl ketone (TCLP), mg/l	ND
Cresol (ortho) (TCLP), mg/l	ND
Cresol m & p (TCLP), mg/l	ND
Hexachlorobenzene (TCLP), mg/l	ND
Pentachlorophenol (TCLP), mg/l	ND
Pyridine (TCLP), mg/l	ND
2,4,5-Trichlorophenol (TCLP), mg/l	ND
2,4,6-Trichlorophenol (TCLP), mg/l	ND

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Project: Wilmington
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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR SOLID/SEMISOLID	DATE SAMPLED
46613-3	Rolloff (# 11483) Matrix Spike % Rec.	11-19-93

PARAMETER	46613-3
Arsenic (TCLP)	99 %
Chromium (TCLP)	83 %
Lead (TCLP)	88 %
Mercury (TCLP - 7470)	89 %
Benzene (TCLP)	88 %
Methyl ethyl ketone (TCLP)	60 %
Cresol (ortho) (TCLP)	94 %
Cresol m & p (TCLP)	---
Hexachlorobenzene (TCLP)	79 %
Pentachlorophenol (TCLP)	56 %
Pyridine (TCLP)	11 %
2,4,5-Trichlorophenol (TCLP)	---
2,4,6-Trichlorophenol (TCLP)	66 %

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Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR SOLID/SEMISOLID
46613-4	Method Blank Extraction Fluid

PARAMETER	46613-4
Arsenic (TCLP), mg/l	ND
Chromium (TCLP), mg/l	ND
Lead (TCLP), mg/l	ND
Mercury (TCLP - 7470), mg/l	ND
Benzene (TCLP), mg/l	ND
Methyl ethyl ketone (TCLP), mg/l	ND
Cresol (ortho) (TCLP), mg/l	ND
Cresol m & p (TCLP), mg/l	ND
Hexachlorobenzene (TCLP), mg/l	ND
Pentachlorophenol (TCLP), mg/l	ND
Pyridine (TCLP), mg/l	ND
2,4,5-Trichlorophenol (TCLP), mg/l	ND
2,4,6-Trichlorophenol (TCLP), mg/l	ND

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR SOLID/SEMISOLID
46613-5	Detection Limits
46613-6	Accuracy (mean % recovery)
46613-7	Precision (% RPD)
46613-8	Analyst Initials
46613-9	EPA Method Numbers

PARAMETER	46613-5	46613-6	46613-7	46613-8	46613-9
Semivolatile Organics (8270)					
bis(2-Chloroethyl)ether, mg/kg dw	0.33	---	---	BK	8270
Naphthalene, mg/kg dw	0.33	---	---	BK	8270
Acenaphthene, mg/kg dw	0.33	---	---	BK	8270
Phenanthrene, mg/kg dw	0.33	---	---	BK	8270
Anthracene, mg/kg dw	0.33	---	---	BK	8270
Fluoranthene, mg/kg dw	0.33	---	---	BK	8270
Chrysene, mg/kg dw	0.33	---	---	BK	8270
Benzo(a)Anthracene, mg/kg dw	0.33	---	---	BK	8270
Benzo(b)fluoranthene, mg/kg dw	0.33	---	---	BK	8270
Benzo(k)fluoranthene, mg/kg dw	0.33	---	---	BK	8270
Benzo(a)pyrene, mg/kg dw	0.33	---	---	BK	8270
Indeno(1,2,3-cd)pyrene, mg/kg dw	0.33	---	---	BK	8270
Dibenz(a,h)anthracene, mg/kg dw	0.33	---	---	BK	8270
2-Chlorophenol, mg/kg dw	0.33	76 %	3.9 %	BK	8270
Phenol, mg/kg dw	0.33	70 %	5.7 %	BK	8270
2,4-Dimethylphenol, mg/kg dw	0.33	---	---	BK	8270
2,4,6-Trichlorophenol, mg/kg dw	0.33	---	---	BK	8270
4-Chloro-3-methylphenol, mg/kg dw	0.33	92 %	4.3 %	BK	8270
2,4-Dinitrophenol, mg/kg dw	1.7	---	---	BK	8270
Pentachlorophenol, mg/kg dw	1.7	96 %	5.1 %	BK	8270
2,4,5-Trichlorophenol, mg/kg dw	1.7	---	---	BK	8270
Tetrachlorophenols, mg/kg dw	1.7	---	---	BK	8270
Carbazole, mg/kg dw	0.33	---	---	BK	8270

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Project: Wilmington
Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR SOLID/SEMISOLID
46613-5	Detection Limits
46613-6	Accuracy (mean % recovery)
46613-7	Precision (% RPD)
46613-8	Analyst Initials
46613-9	EPA Method Numbers

PARAMETER	46613-5	46613-6	46613-7	46613-8	46613-9
Volatiles by GC/MS					
Chloromethane, mg/kg dw	0.010	---	---	TCS	8240
Bromomethane, mg/kg dw	0.010	---	---	TCS	8240
Vinyl Chloride, mg/kg dw	0.010	---	---	TCS	8240
Chloroethane, mg/kg dw	0.010	---	---	TCS	8240
Methylene Chloride (Dichloromethane), mg/kg dw	0.0050	---	---	TCS	8240
1,1-Dichloroethene, mg/kg dw	0.0050	132 %	0.76 %	TCS	8240
1,1-Dichloroethane, mg/kg dw	0.0050	---	---	TCS	8240
Trans-1,2-Dichloroethylene, mg/kg dw	0.0050	---	---	TCS	8240
1,2-Dichloroethane, mg/kg dw	0.0050	---	---	TCS	8240
1,1,1-Trichloroethane, mg/kg dw	0.0050	---	---	TCS	8240
Carbon Tetrachloride, mg/kg dw	0.0050	---	---	TCS	8240
Bromodichloromethane, mg/kg dw	0.0050	---	---	TCS	8240
1,1,2,2-Tetrachloroethane, mg/kg dw	0.0050	---	---	TCS	8240
1,2-Dichloropropane, mg/kg dw	0.0050	---	---	TCS	8240
Trichloroethene, mg/kg dw	0.0050	134 %	1.5 %	TCS	8240
Dibromochloromethane, mg/kg dw	0.0050	---	---	TCS	8240

SL SAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC.

5102 LaRoche Avenue • Savannah, GA 31404 • (912) 354-7858 • Fax (912) 352-0165

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ENVIRONMENTAL AFFAIRS

LOG NO: S3-46613

Received: 20 NOV 93

Ms. Sandra Watson
Southern Wood Piedmont (WI)
P.O. Box 5477, I-85 and Sigsbee Rd.
Spartanburg, SC 29304

Project: Wilmington
Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR SOLID/SEMISOLID
46613-5	Detection Limits
46613-6	Accuracy (mean % recovery)
46613-7	Precision (% RPD)
46613-8	Analyst Initials
46613-9	EPA Method Numbers

PARAMETER	46613-5	46613-6	46613-7	46613-8	46613-9
1,1,2-Trichloroethane, mg/kg dw	0.0050	---	---	TCS	8240
Benzene, mg/kg dw	0.0050	125 %	0.76 %	TCS	8240
Cis-1,3-Dichloropropene, mg/kg dw	0.0050	---	---	TCS	8240
2-Chloroethylvinyl Ether, mg/kg dw	0.050	---	---	TCS	8240
Toluene, mg/kg dw	0.0050	132 %	0.76 %	TCS	8240
Chlorobenzene, mg/kg dw	0.0050	134 %	0.75 %	TCS	8240
Ethylbenzene, mg/kg dw	0.0050	---	---	TCS	8240
m&p-Xylene, mg/kg dw	0.0050	---	---	TCS	8240
o-Xylene, mg/kg dw	0.0050	---	---	TCS	8240
Methyl-Tert-Butyl-Ether (MTBE), mg/kg dw	0.050	---	---	TCS	8240
Fluorotrichloromethane, mg/kg dw	0.0050	---	---	TCS	8240
1,2-Dibromoethane (EDB) , mg/kg dw	0.0050	---	---	TCS	8240
Dichlorodifluoromethane, mg/kg dw	0.0050	---	---	TCS	8240
Arsenic (7060), mg/kg dw	1.0	126 %	4.0 %	LR	7060
Chromium (6010), mg/kg dw	1.0	100 %	1.0 %	SD	6010
Copper (6010), mg/kg dw	2.5	102 %	0.98 %	SD	6010
Arsenic (TCLP), mg/l	0.20	94 %	3.2 %	DM	6010

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ENVIRONMENTAL AFFAIRS

LOG NO: S3-46613

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Spartanburg, SC 29304

Project: Wilmington
Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR SOLID/SEMISOLID
46613-5	Detection Limits
46613-6	Accuracy (mean % recovery)
46613-7	Precision (% RPD)
46613-8	Analyst Initials
46613-9	EPA Method Numbers

PARAMETER	46613-5	46613-6	46613-7	46613-8	46613-9
Chromium (TCLP), mg/l	0.050	94 %	5.3 %	DM	6010
Lead (TCLP), mg/l	0.20	97 %	4.1 %	DM	6010
Mercury (TCLP - 7470), mg/l	0.020	112 %	11 %	BB	7470
Benzene (TCLP), mg/l	0.020	118 %	1.7 %	KA	8240
Methyl ethyl ketone (TCLP), mg/l	0.050	---	---	KA	8240
Cresol (ortho) (TCLP), mg/l	0.050	---	---	RB	8270
Cresol m & p (TCLP), mg/l	0.050	---	---	RB	8270
Hexachlorobenzene (TCLP), mg/l	0.050	---	---	RB	8270
Pentachlorophenol (TCLP), mg/l	0.25	70 %	7.1 %	RB	8270
Pyridine (TCLP), mg/l	1.0	---	---	RB	8270
2,4,5-Trichlorophenol (TCLP), mg/l	0.050	---	---	RB	8270
2,4,6-Trichlorophenol (TCLP), mg/l	0.050	---	---	RB	8270

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LOG NO: S3-46613

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Spartanburg, SC 29304

Project: Wilmington
Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR SOLID/SEMISOLID
46613-10	Date Extracted
46613-11	Date Analyzed

PARAMETER	46613-10	46613-11
Semivolatile Organics (8270)		
bis(2-Chloroethyl)ether	11.24.93	11.29.93
Naphthalene	11.24.93	11.29.93
Acenaphthene	11.24.93	11.29.93
Phenanthrene	11.24.93	11.29.93
Anthracene	11.24.93	11.29.93
Fluoranthene	11.24.93	11.29.93
Chrysene	11.24.93	11.29.93
Benzo(a)Anthracene	11.24.93	11.29.93
Benzo(b)fluoranthene	11.24.93	11.29.93
Benzo(k)fluoranthene	11.24.93	11.29.93
Benzo(a)pyrene	11.24.93	11.29.93
Indeno(1,2,3-cd)pyrene	11.24.93	11.29.93
Dibenz(a,h)anthracene	11.24.93	11.29.93
2-Chlorophenol	11.24.93	11.29.93
Phenol	11.24.93	11.29.93
2,4-Dimethylphenol	11.24.93	11.29.93
2,4,6-Trichlorophenol	11.24.93	11.29.93
4-Chloro-3-methylphenol	11.24.93	11.29.93
2,4-Dinitrophenol	11.24.93	11.29.93
Pentachlorophenol	11.24.93	11.29.93
2,4,5-Trichlorophenol	11.24.93	11.29.93
Carbazole	11.24.93	11.29.93
Tetrachlorophenols	11.24.93	11.29.93

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Project: Wilmington
Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR SOLID/SEMISOLID
46613-10	Date Extracted
46613-11	Date Analyzed

PARAMETER	46613-10	46613-11
Volatiles by GC/MS		
Chloromethane	---	12.02.93
Bromomethane	---	12.02.93
Vinyl Chloride	---	12.02.93
Chloroethane	---	12.02.93
Methylene Chloride (Dichloromethane)	---	12.02.93
1,1-Dichloroethene	---	12.02.93
1,1-Dichloroethane	---	12.02.93
Trans-1,2-Dichloroethylene	---	12.02.93
1,2-Dichloroethane	---	12.02.93
1,1,1-Trichloroethane	---	12.02.93
Carbon Tetrachloride	---	12.02.93
Bromodichloromethane	---	12.02.93
1,1,2,2-Tetrachloroethane	---	12.02.93
1,2-Dichloropropane	---	12.02.93
Trichloroethene	---	12.02.93
Dibromochloromethane	---	12.02.93
1,1,2-Trichloroethane	---	12.02.93
Benzene	---	12.02.93
Cis-1,3-Dichloropropene	---	12.02.93
2-Chloroethylvinyl Ether	---	12.02.93
Toluene	---	12.02.93
Chlorobenzene	---	12.02.93

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P.O. Box 5477, I-85 and Sigsbee Rd.
Spartanburg, SC 29304

Project: Wilmington
Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR SOLID/SEMISOLID
46613-10	Date Extracted
46613-11	Date Analyzed

PARAMETER	46613-10	46613-11
Ethylbenzene	---	12.02.93
m&p-Xylene	---	12.02.93
o-Xylene	---	12.02.93
1,2-Dibromoethane (EDB)	---	12.02.93
Methyl-Tert-Butyl-Ether (MTBE)	---	12.02.93
Dichlorodifluoromethane	---	12.02.93
Fluorotrichloromethane	---	12.02.93
Arsenic (7060)	---	12.04.93
Chromium (6010)	---	12.05.93
Copper (6010)	---	12.05.93
Arsenic (TCLP)	---	12.01.93
Chromium (TCLP)	---	12.01.93
Lead (TCLP)	---	12.01.93
Mercury (TCLP - 7470)	---	11.30.93
Benzene (TCLP)	---	12.12.93
Methyl ethyl ketone (TCLP)	---	12.12.93
Cresol (ortho) (TCLP)	12.01.93	12.02.93
Cresol m & p (TCLP)	12.01.93	12.02.93
Hexachlorobenzene (TCLP)	12.01.93	12.02.93
Pentachlorophenol (TCLP)	12.01.93	12.02.93
Pyridine (TCLP)	12.01.93	12.02.93
2,4,5-Trichlorophenol (TCLP)	12.01.93	12.02.93
2,4,6-Trichlorophenol (TCLP)	12.01.93	12.02.93

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Ms. Sandra Watson
Southern Wood Piedmont (WI)
P.O. Box 5477, I-85 and Sigsbee Rd.
Spartanburg, SC 29304

Project: Wilmington
Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES
46613-12	Report Completion Date

PARAMETER	46613-12
Date Reported	12.30.93

Methods: EPA SW-846
ND = Not Detected

J. W. Andrews

J. W. Andrews, Ph. D.

Final Page Of Report

SL SAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC.

05181

☒ 5102 LaRoche Avenue, Savannah, GA 31404 — Phone: (912) 354-7858 — Fax (912) 352-0165
☐ 2846 Industrial Plaza Drive, Tallahassee, FL 32301 — Phone: (904) 878-3994 — Fax (904) 878-9504
☐ 414 Southwest 12th Avenue, Deerfield Beach, FL 33442 — Phone: (305) 421-7400 — Fax (305) 421-2584
☐ 900 Lakeside Drive, Mobile, AL 36693 — Phone: (205) 666-6633 — Fax (205) 666-6696
☐ 6712 Benjamin Road, Suite 100, Tampa, FL 33634 — Phone: (813) 885-7427 — Fax (813) 885-7049

NALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

O. NUMBER	PROJECT NUMBER	PROJECT NAME
	12-53015.00	SWP-Wilmington

LIENT NAME	TELEPHONE/FAX NO.
iro Group, Inc.	803-957-6270 803-957-3845

LIENT ADDRESS	CITY, STATE, ZIP CODE
445 Pisgah Church Rd	Lexington, SC 29072

AMPLER(S) NAME(S)	CLIENT PROJECT MANAGER
orey Kuntz, James Leaphart	Greg Kuntz

PAGE 1 OF 1

☒ STANDARD TAT
☐ EXPEDITED TAT *

REPORT DUE DATE _____

* SUBJECT TO RUSH FEES

SAMPLING DATE	SAMPLING TIME	SAMPLE IDENTIFICATION	AQUEOUS MATRIX	NONAQUEOUS MATRIX	OIL MATRIX	AIR MATRIX	As, Cr, Cu	VOC	SV	*TCLP Site Specific								
			NUMBER OF CONTAINERS SUBMITTED															
1-19-93	10:50	SS-10A #11504		X			1	1	1									
1-19-93	11:30	Roll-off #11483		↓						4								

* TCLP Site Specific List
Arsenic
Benzene
Chromium
O-cresol
m-cresol
p-cresol
hexachlorobenzene
lead
Mercury
Methyl ethyl ketone
pentachlorophenol
pyridine
2,4,5-trichlorophenol
2,4,6-trichlorophenol

RECEIVED JAN 0 3 1994 ENVIRONMENTAL AFFAIRS

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
[signature]	11/11	12:00	[signature]	11/19/93	12:57			
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RELINQUISHED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
Gregory B. Kuntz	11/16/93	7:30	Gregory B. Kuntz	11/19/93	12:58			

FOR SAVANNAH LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	S.L.L. LOG NO.	LABORATORY REMARKS
[signature]	11/20/93	11:25	☑ YES ☐ NO		46613	

NOV 10 '93 03:57PM SOUTHERN WOOD BOTTLE ORDER 11/18/93

Send bottles to ETE for Mon, 11/15

SITE-SPECIFIC GROUND WATER SAMPLE LIST
SOUTHERN WOOD PIEDMONT FACILITY
WILMINGTON, NORTH CAROLINA

METALS (Total + Dissolved)

- Arsenic
- Copper
- Chromium

SEMI-VOLATILES

Acenaphthene	Anthracene
Benzo(a)anthracene	Benzo(a)pyrene
Benzo(b)fluoranthene	Benzo(k)fluoranthene
Bis(2-chloroethyl)ether	Carbazole
4-chloro-3-methylphenol	2-chlorophenol
Chrysene	Dibenzo(a,h)anthracene
2,4-dimethylphenol	2,4-dinitrophenol
Fluoranthene	Indeno(1,2,3-cd)pyrene
Naphthalene	Pentachlorophenol
Phenanthrene	Phenol
Tetrachlorophenol	2,4,5-trichlorophenol
2,4,6-trichlorophenol	

VOLATILES

Benzene	Bromodichloromethane
Bromomethane	Carbon Tetrachloride
Chlorobenzene	Chloroethane
2-chloroethylvinylether	MTBE
Chloromethane	Cis-1,3-dichloropropene
Dibromochloromethane	1,2-dibromomethane (Edb)
Dichlorodifluoromethane	1,1-dichloroethane
1,2-dichloroethane	1,1-dichloroethene
Dichloromethane	1,2-dichloropropane
Ethyl benzene	Fluorotrichloromethane
M/P-Xylene	Methyl-T-Butyl Ether (Mtbe)
O-Xylene	1,1,2,2-tetrachloroethane
Toluene	Trans-1,2-dichloroethene
1,1,1-trichloroethane	1,1,2-trichloroethane
Trichloroethene	Vinyl Chloride

Postit® brand fax transmittal memo 7671 | # of pages ▸ 1
To: Phillip F. | From: Ralph Stilp
Co. Southern Wood | Co.
Dept. | Phone #
Fax # | Fax #

49

36 H_2O's for above constituents
2 Field Blanks
2 Trip Blanks } for all constituents
3 H_2O's: Total Petroleum Hydrocarbons - gasoline
TPH - Diesel
3 soils for above site specific list

D00045

ATTACHMENT G

Wilmington Site-Specific Groundwater Constituent List

SITE-SPECIFIC GROUNDWATER SAMPLE LIST
SOUTHERN WOOD PIEDMONT FACILITY
WILMINGTON, NORTH CAROLINA

METALS

Arsenic
Copper
Chromium

SEMI-VOLATILES

Acenaphthene
Benzo(a)anthracene
Benzo(b)fluoranthene
Bis(2-chloroethyl)ether
4-chloro-3-methylphenol
Chrysene
2,4-dimethylphenol
Fluoranthene
Naphthalene
Phenanthrene
Tetrachlorophenol
2,4,6-trichlorophenol
Anthracene
Benzo(a)pyrene
Benzo(k)fluoranthene
Carbazole
2-chlorophenol
Dibenzo(a,h)anthracene
2,4-dinitrophenol
Indeno(1,2,3-cd)pyrene
Pentachlorophenol
Phenol
2,4,5-trichlorophenol

VOLATILES

Benzene
Bromomethane
Chlorobenzene
2-chloroethylvinylether
Cis-1,3-dichloropropene
1,2-dibromomethane (Edb)
1,1-dichloroethane
1,1-dichloroethene
1,2-dichloropropane
Fluorotrichloromethane
Methyl-T-Butyl Ether (Mtbe)
1,1,2,2-tetrachloroethane
Trans-1,2-dichloroethene
1,1,2-trichloroethane
Vinyl Chloride
Bromodichloromethane
Carbon Tetrachloride
Chloroethane
Chloromethane
Dibromochloromethane
Dichlorodifluoromethane
1,2-dichloroethane
Dichloromethane
Ethyl benzene
M/P-Xylene
O-Xylene
Toluene
1,1,1-trichloroethane
Trichloroethene

Groundwater Sample Collection Summary Sheets

ViroGroup
Air • Water • Soil
TECHNOLOGY

ETE Division
PO Box 1867
1445 Pisgah Church Rd.
Lexington, SC 29072
(803) 957-6270

AQUEOUS SAMPLE COLLECTION SUMMARY SHEET

SITE NAME/CITY/COUNTY: SWP – Wilmington PROJECT NUMBER: 12–53015.00

SAMPLED BY: Kuntz & Leaphart WEATHER: Overcast 50 to 75 SAMPLE TYPE: Groundwater

SAMPLING METHOD: Bailer SPLITS/SPIKES/DUPLICATES:

SAMPLING CONTAINERS: (NUMBER/SIZE/TYPE) 6/40ML/GW/TFE; 1/250ML/P 2/L/A; 2/250ml/P; 4/1L/AGW/TFE REASON FOR SAMPLING: Phase III Assessment

PARAMETERS REQUESTED: SV, VOC, Cu, As, Cr TPH Diesel, TPH Gas LAB Performing Analysis: Savannah Labs RESPIRATORY PROTECTION: None

SAMPLE NUMBER	DATE	TIME	(TOC) WELL DEPTH	(TOC) WATER LEVEL	PURGE METHOD	SAMPLE APPEARANCE	(GAL) VOLUME PURGED	(C) TEMP.	PPM COND.	pH	REMARKS
MW–6	11–17–93	14:20	21.74	2.87	Bailer	S.T. Brown	3.07	20	420	6.2	0.2 pptd Salinity
							3.07	20	750	6.2	
							3.07	20	740	6.2	
MW–7	11–17–93	15:10	21.88	4.30	"	S.T. Brown	2.86	19	690	6.0	3.8 pptd Salinity
							2.86	20	>2000	6.1	
							2.86	20	>2000	6.1	
MW–8	11–17–93	15:40	21.98	4.70	"	S.T. Brown	2.76	19	370	6.0	0.01 pptd Salinity
							2.76	20	420	6.0	
							2.76	21	460	5.9	
MW–8A	11–17–93	15:20	33.18	4.52	"	Clear	4.59	19	310	7.2	0 pptd Salinity
							4.59	19	340	6.7	
							4.59	21	330	6.4	

SAMPLE NUMBER	DATE	TIME	(TOC) WELL DEPTH	(TOC) WATER LEVEL	PURGE METHOD	SAMPLE APPEARANCE	(GAL) VOLUME PURGED	(C) TEMP.	PPM COND.	pH	REMARKS
MW-9	11-17-93	15.50	21.71	4.22	Bailer	Clear	2.80	19	380	6.1	0.1 pptd Salinity
							2.80	19	380	6.0	
							2.80	20	410	6.1	
MW-10	11-17-93	16:00	14.39	5.05	"	Clear	1.49	18	310	7.0	0.1 pptd Salinity
							1.49	18	330	7.1	
							1.49	19	340	6.6	
MW-11	11-16-93		13.71	5.66							No Sample Collected
											0.01' Heavy Product
MW-11A	11-18-93	15:15	36.47	4.39	Bailer	S.T. Brown	5.13	19	190	7.1	Slight Odor
							5.13	19	230	6.9	0 pptd Salinity
							5.13	19	220	7.2	
MW-11B	11-18-93	8:45	44.32	4.23	"	S.T. Brown	6.41	21	220	9.3	0 pptd Salinity
							6.41	21	220	10.2	
							6.41	20	200	9.6	
MW-12	11-18-93	15:40	13.91	5.60	"	S.T. Brown	1.33	21	60	7.5	Trace Heavy Product
							1.33	20	60	7.2	0 pptd Salinity
							1.33	20	80	7.1	Trace Light Sheen Moderate Odor
MW-13	11-18-93	16:00	14.20	4.97	"	T. Black	1.47	20	590	7.0	Strong Diesel Odor Slight Creosote Odor
							1.47	19	680	6.7	Trace Light Sheen
							1.47	19	780	6.6	0.5 pptd Salinity

SAMPLE NUMBER	DATE	TIME	(TOC) WELL DEPTH	(TOC) WATER LEVEL	PURGE METHOD	SAMPLE APPEARANCE	(GAL) VOLUME PURGED	(C) TEMP.	PPM COND.	pH	REMARKS
MW-14	11-16-93		17.88	4.75							No Sample Collected
											0.41' Heavy Product
MW-14A	11-18-93	15:25	33.44	3.26	Bailer	S.T. Brown	4.83	22	200	6.7	Moderate Odor
							4.83	20	230	6.5	0 pptd Salinity
							4.83	20	220	6.5	
MW-15	11-18-93	14:20	14.02	4.73	"	Clear	1.49	21	510	6.9	Slight Diesel Odor
							1.49	20	560	6.5	0.2 pptd Salinity
							1.49	20	570	6.5	
MW-16	11-18-93	16:20	14.32	5.64	"	S.T. Brown	1.39	20	420	6.9	Moderate Diesel Odor
							1.39	20	360	6.9	Trace Light Sheen
							1.39	20	300	6.8	0.2 pptd Salinity
MW-17	11-18-93	16:10	14.64	5.53	"	S.T. Brown	1.46	20	380	6.9	Moderate Diesel Odor
							1.46	20	370	6.5	Trace Light Sheen
							1.46	19	270	6.7	0.2 pptd Salinity
MW-18	11-17-93	14:50	13.62	4.80	"	V.T. Rust	1.41	20	>2000	7.0	4.0 pptd Salinity
							1.41	20	>2000	6.9	
							1.41	20	>2000	6.8	
MW-19	11-18-93	14:50	15.24	3.24	"	Clear	1.92	20	680	6.4	Slight Odor
							1.92	20	750	6.6	0.1 pptd Salinity
							1.92	20	860	6.6	
MW-19A	11-18-93	9:10	33.61	3.28	"	Clear	4.85	19	290	7.0	Sulphur Odor
							4.85	19	320	6.9	
							4.85	19	290	6.9	

SAMPLE NUMBER	DATE	TIME	(TOC) WELL DEPTH	(TOC) WATER LEVEL	PURGE METHOD	SAMPLE APPEARANCE	(GAL) VOLUME PURGED	(C) TEMP.	PPM COND.	pH	REMARKS
MW-20	11-18-93	8:30	14.66	3.44	Bailer	S.T. Brown	1.80	20	1220	6.4	Very Slight Odor
							1.80	21	1040	6.2	0.9 pptd Salinity
							1.80	21	1040	6.2	
MW-20A	11-17-93	16:15	33.11	3.15	"	Clear	4.79	19	290	6.9	0 pptd Salinity
							4.79	18	290	7.1	
							4.79	18	260	7.1	
MW-21	11-17-93	16:30	9.92	3.82	"	S.T. Brown	0.98	18	430	6.5	0.2 pptd Salinity
							0.98	18	430	6.3	
							0.98	18	410	6.3	
MW-22	11-16-93		13.76	3.75							0.23' Heavy Product
											No Sample Collected
MW-22A	11-18-93	14:05	34.11	3.37	Bailer	Clear	4.92	20	230	6.3	0 pptd Salinity
							4.92	19	270	6.4	
							4.92	19	240	6.4	
MW-23	11-17-93	16:40	11.84	2.86	"	S.T. Brown	1.44	19	1350	6.2	1 pptd Salinity
							1.44	19	1240	6.3	
							1.44	19	1160	6.4	
MW-24	11-18-93	15:05	15.61	3.71	"	T. Brown	1.90	19	1200	6.0	Slight Odor
							1.90	19	1150	6.1	0.8 pptd Salinity
							1.90	19	1140	6.2	
MW-24A	11-17-93	16:50	36.45	3.88	"	Clear	5.21	18	320	6.8	Sulphur Odor
							5.21	18	320	6.9	0.1 pptd Salinity
							5.21	18	270	6.9	

SAMPLE NUMBER	DATE	TIME	(TOC) WELL DEPTH	(TOC) WATER LEVEL	PURGE METHOD	SAMPLE APPEARANCE	(GAL) VOLUME PURGED	(C) TEMP.	PPM COND.	pH	REMARKS
MW-25	11-18-93	8:15	14.91	2.17	Bailer	T. Brown	2.04	20	700	6.2	0.7 pptd Salinity
							0.96	19	770	6.0	Dry 3 Gallons
											Slight Odor
MW-26	11-16-93		20.54	4.14							5.24' Heavy Product
											No Sample Collected
MW-27	11-18-93	14:25	7.31	2.41	Bailer	S.T. Brown	0.78	20	400	6.4	V. Slight Diesel Odor
							0.78	19	410	6.4	0.1 pptd Salinity
							0.78	19	420	6.5	
MW-28	11-18-93	15:40	13.28	4.35	"	S.T. Brown	1.43	18	1470	7.3	Slight Odor
							1.43	18	1960	6.9	Trace Light ~~Product~~ sheen
							1.43	18	1890	6.9	1.5 pptd Salinity
MW-28A	11-18-93	13:50	27.89	4.12	"	Clear	3.80	19	190	7.5	0 pptd Salinity
							3.80	18	280	9.1	
							3.80	18	250	8.5	
MW-29	11-18-93	7:20	9.36	4.29	"	S.T. Yellow	0.81	18	>2000	5.8	Sulphur Odor
							0.81	18	>2000	6.0	2.0 pptd Salinity
							0.81	18	>2000	6.0	
MW-29A	11-18-93	7:40	40.97	3.41	"	Clear	6.01	19	320	7.2	Slight Odor
							6.01	19	260	9.3	0.2 pptd Salinity
							6.01	19	300	8.3	
MW-30	11-18-93	8:00	11.21	4.44	"	S.T. Brown	1.08	19	350	7.1	0.1 pptd Salinity
							1.08	19	650	6.6	
							1.08	19	890	6.4	

Phase III Groundwater Salinity Summary Table

PHASE III GROUNDWATER SALINITY SUMMARY TABLE
SOUTHERN WOOD PIEDMONT FACILITY
WILMINGTON, NORTH CAROLINA

WELL	DATE	SALINITY
6	11–16–93	200
7	11–16–93	3800
8	11–16–93	100
8A	11–16–93	0
9	11–16–93	100
10	11–16–93	100
11	11–16–93	NA
11A	11–16–93	0
11B	11–16–93	0
12	11–16–93	0
13	11–16–93	500
14	11–16–93	NA
14A	11–16–93	0
15	11–16–93	200
16	11–16–93	200
17	11–16–93	200
18	11–16–93	4000
19	11–16–93	100
19A	11–16–93	0
20	11–16–93	900
20A	11–16–93	0
21	11–16–93	200
22	11–16–93	NA
22A	11–16–93	200
23	11–16–93	1000
24	11–16–93	800
24A	11–16–93	100
25	11–16–93	700
26	11–16–93	NA
27	11–16–93	100
28	11–16–93	1500
28A	11–16–93	0
29	11–16–93	2000
29A	11–16–93	200
30	11–16–93	100

NA – Salinity not collected
Salinity measurements are in parts per million (ppm).

Phase III Groundwater Parameter Summary Table - Metals

PHASE III GROUNDWATER SAMPLE PARAMETER SUMMARY TABLE
METALS
SOUTHERN WOOD PIEDMONT FACILITY
WILMINGTON, NORTH CAROLINA

METALS	DL*	MW-6	MW-7	MW-8	MW-8A	MW-9	MW-10	MW-11A	MW-11B	MW-12	MW-13
Arsenic	0.01	ND	ND	ND	ND	0.049	0.05	ND	ND	0.029	0.049
Arsenic (Dissolved)	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	0.01	ND	ND	ND	ND	ND	ND	ND	ND	0.024	0.04
Chromium (Dissolved)	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper	0.025	ND	ND	ND	ND	ND	ND	ND	ND	0.043	0.058
Copper (Dissolved)	0.025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

METALS	DL*	MW-14A	MW-15	MW-16	MW-17	MW-18	MW-19	MW-19A	MW-20	MW-20A	MW-21
Arsenic	0.01	ND	0.088	ND	0.023	0.016	ND	ND	ND	ND	0.019
Arsenic (Dissolved)	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	0.01	ND	ND	ND	0.012	4.6	ND	ND	ND	ND	0.016
Chromium (Dissolved)	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper	0.025	ND	ND	ND	0.025	0.05	ND	ND	ND	ND	ND
Copper (Dissolved)	0.025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

METALS	DL*	MW-22A	MW-23	MW-24	MW-24A	MW-25	MW-27	MW-28	MW-28A	MW-29	MW-29A	MW-30
Arsenic	0.01	ND	ND	ND	ND	ND	0.014	ND	ND	ND	ND	ND
Arsenic (Dissolved)	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	0.01	ND	ND	0.01	ND	0.011	ND	ND	ND	ND	ND	0.024
Chromium (Dissolved)	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper	0.025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Copper (Dissolved)	0.025	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NOTE: DL = Laboratory Detection Limit

All units in mg/l.

Phase III Groundwater Parameter Summary Table - Semi-Volatiles

PHASE III GROUNDWATER SAMPLE PARAMETER SUMMARY TABLE
SEMI-VOLATILES
SOUTHERN WOOD PIEDMONT FACILITY
WILMINGTON, NORTH CAROLINA

SEMI-VOLATILES	DL*	MW-6	MW-7	MW-8	MW-8A	MW-9	MW-10	MW-11A	MW-11B	MW-12	MW-13
Acenaphthene	0.01	ND	ND	ND	ND	ND	ND	0.076	0.081	0.77	0.8
Anthracene	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a)Anthracene	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a)Pyrene	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(b)Fluoranthene	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(k)Fluoranthene	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-Chloroethyl)Ether	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbazole	0.01	ND	ND	ND	ND	ND	ND	ND	ND	0.21	0.22
4-Chloro-3-Methylphenol	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chlorophenol	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chrysene	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenz(a,h)Anthracene	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dimethylphenol	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dinitrophenol	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	0.01	ND	ND	ND	ND	ND	ND	ND	ND	0.31	0.3
Indeno(1,2,3-Cd)Pyrene	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Napthalene	0.01	ND	ND	ND	ND	ND	ND	0.31	ND	3.1	3.1
Pentachlorophenol	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	0.01	ND	ND	ND	ND	ND	ND	0.047	0.039	0.74	0.77
Phenol	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachlorophenols	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4,5-Trichlorophenol	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4,6-Trichlorophenol	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NOTE: DL = Laboratory Detection Limit

All units in mg/l.

PHASE III GROUNDWATER SAMPLE PARAMETER SUMMARY TABLE
SEMI-VOLATILES
SOUTHERN WOOD PIEDMONT FACILITY
WILMINGTON, NORTH CAROLINA

SEMI-VOLATILES	DL*	MW-14A	MW-15	MW-16	MW-17	MW-18	MW-19	MW-19A	MW-20	MW-20A	MW-21
Acenaphthene	0.01	0.41	0.074	ND	0.016	ND	0.27	ND	0.014	ND	ND
Anthracene	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a)Anthracene	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a)Pyrene	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(b)Fluoranthene	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(k)Fluoranthene	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2-Chloroethyl)Ether	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbazole	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Chloro-3-Methylphenol	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chlorophenol	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chrysene	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenz(a,h)Anthracene	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dimethylphenol	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dinitrophenol	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	0.01	ND	ND	ND	0.01	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-Cd)Pyrene	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Napthalene	0.01	3.3	0.055	ND	ND	ND	0.29	ND	ND	ND	ND
Pentachlorophenol	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	0.01	ND	0.015	ND	0.017	ND	0.077	ND	ND	ND	ND
Phenol	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachlorophenols	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4,5-Trichlorophenol	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4,6-Trichlorophenol	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NOTE: DL = Laboratory Detection Limit

All units in mg/l.

PHASE III GROUNDWATER SAMPLE PARAMETER SUMMARY TABLE
SEMI–VOLATILES
SOUTHERN WOOD PIEDMONT FACILITY
WILMINGTON, NORTH CAROLINA

SEMI–VOLATILES	DL*	MW–22A	MW–23	MW–24	MW–24A	MW–25	MW–27	MW–28	MW–28A	MW–29	MW–29A	MW–30
Acenaphthene	0.01	0.012	ND	0.29	ND	0.043	ND	0.012	ND	ND	0.54	0.04
Anthracene	0.01	ND	ND	ND	ND	0.025	ND	ND	ND	ND	ND	0.026
Benzo(a)Anthracene	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a)Pyrene	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(b)Fluoranthene	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(k)Fluoranthene	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bis(2–Chloroethyl)Ether	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbazole	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.019	0.013
4–Chloro–3–Methylphenol	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2–Chlorophenol	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chrysene	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenz(a,h)Anthracene	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4–Dimethylphenol	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4–Dinitrophenol	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	0.01	ND	ND	ND	ND	0.034	ND	ND	ND	ND	ND	0.016
Indeno(1,2,3–Cd)Pyrene	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Napthalene	0.01	0.018	ND	0.29	ND	ND	ND	ND	ND	ND	ND	ND
Pentachlorophenol	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	0.01	ND	ND	0.068	ND	0.062	ND	0.021	ND	ND	ND	0.058
Phenol	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachlorophenols	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4,5–Trichlorophenol	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2,4,6–Trichlorophenol	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NOTE: DL = Laboratory Detection Limit

All units in mg/l.

Phase III Groundwater Parameter Summary Table - Volatiles

PHASE III GROUNDWATER SAMPLE PARAMETER SUMMARY TABLE
VOLATILES
SOUTHERN WOOD PIEDMONT FACILITY
WILMINGTON, NORTH CAROLINA

VOLATILES	DL*	MW-6	MW-7	MW-8	MW-8A	MW-9	MW-10	MW-11A	MW-11B	MW-12	MW-13
Benzene	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.046
Bromodichloroethane	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloroethylvinyl Ether	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cis-1,3-Dichloropropene	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromomethane	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichloromethane	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Benzene	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.026
Fluorotrichloromethane	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M/P-Xylene	0.005	ND	ND	ND	ND	ND	ND	ND	ND	0.011	0.014
Methyl-T-Butyl Ether (Mtbe)	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
o-Xylene	0.005	ND	ND	ND	ND	ND	ND	ND	ND	0.0066	0.013
1,1,2,2-Tetrachloroethane	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	0.005	ND	ND	ND	ND	ND	ND	ND	ND	0.0074	ND
Trans-1,2-Dichloroethylene	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NOTE: DL = Laboratory Detection Limit
All units in mg/l

PHASE III GROUNDWATER SAMPLE PARAMETER SUMMARY TABLE
VOLATILES
SOUTHERN WOOD PIEDMONT FACILITY
WILMINGTON, NORTH CAROLINA

VOLATILES	DL*	MW-14A	MW-15	MW-16	MW-17	MW-18	MW-19	MW-19A	MW-20	MW-20A	MW-21
Benzene	0.005	ND	ND	ND	ND	ND	0.0055	ND	ND	ND	ND
Bromodichloroethane	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloroethylvinyl Ether	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cis-1,3-Dichloropropene	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromomethane	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichloromethane	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Benzene	0.005	0.018	0.0051	ND	ND	ND	0.0058	ND	ND	ND	ND
Fluorotrichloromethane	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M/P-Xylene	0.005	0.02	ND	ND	ND	ND	0.0054	ND	ND	ND	ND
Methyl-T-Butyl Ether (Mtbe)	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
o-Xylene	0.005	0.0087	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trans-1,2-Dichloroethylene	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NOTE: DL = Laboratory Detection Limit
All units in mg/l

PHASE III GROUNDWATER SAMPLE PARAMETER SUMMARY TABLE
VOLATILES
SOUTHERN WOOD PIEDMONT FACILITY
WILMINGTON, NORTH CAROLINA

VOLATILES	DL*	MW-22A	MW-23	MW-24	MW-24A	MW-25	MW-27	MW-28	MW-28A	MW-29	MW-29A	MW-30
Benzene	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloroethane	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
2-Chloroethylvinyl Ether	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cis-1,3-Dichloropropene	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromochloromethane	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromomethane	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dichloromethane	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethyl Benzene	0.005	ND	ND	0.0089	ND	ND	ND	ND	ND	ND	ND	ND
Fluorotrichloromethane	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
M/P-Xylene	0.005	0.0061	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl-T-Butyl Ether (Mtbe)	0.05	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
o-Xylene	0.005	0.006	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trans-1,2-Dichloroethylene	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl Chloride	0.01	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

NOTE: DL = Laboratory Detection Limit

All units in mg/l

Phase III Groundwater Parameter Summary Table - Hydrocarbons

PHASE III GROUNDWATER SAMPLE PARAMETER SUMMARY TABLE
HYDROCARBONS
SOUTHERN WOOD PIEDMONT FACILITY
WILMINGTON, NORTH CAROLINA

HYDROCARBONS	DL*	MW–6	MW–18	MW–27
Hydrocarbons as Gasoline	0.05	ND	ND	ND
Hydrocarbons as Kerosene	0.3	ND	ND	ND
Hydrocarbons as Heavy Oils	1.0	ND	ND	ND
Hydrocarbons as Mineral Spirits	0.3	ND	ND	ND
Hydrocarbons as Varsol	0.3	ND	ND	ND
Hydrocarbons as Fuel Oil/Diesel	0.3	ND	ND	ND

NOTE: DL = Laboratory Detection Limit
All units in mg/l

Phase III Groundwater Sample Laboratory Analytical Data and QA/QC

SL SAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC.

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2nd JW
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LOG NO: S3-46553

Received: 18 NOV 93

Ms. Sandra Watson
Southern Wood Piedmont (WI)
P.O. Box 5477, I-85 and Sigsbee Rd.
Spartanburg, SC 29304

Project: Wilmington, NC
Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE SAMPLED
46553-1	MW-7 (# 11437)	11-17-93
46553-2	MW-8A (# 11438)	11-17-93
46553-3	MW-8 (# 11439)	11-17-93
46553-4	MW-9 (# 11440)	11-17-93
46553-5	MW-10 (# 11441)	11-17-93

PARAMETER	46553-1	46553-2	46553-3	46553-4	46553-5
Semivolatile Organics (8270)					
bis(2-Chloroethyl)ether, mg/l	ND	ND	ND	ND	ND
Naphthalene, mg/l	ND	ND	ND	ND	ND
Acenaphthene, mg/l	ND	ND	ND	ND	ND
Phenanthrene, mg/l	ND	ND	ND	ND	ND
Anthracene, mg/l	ND	ND	ND	ND	ND
Fluoranthene, mg/l	ND	ND	ND	ND	ND
Chrysene, mg/l	ND	ND	ND	ND	ND
Benzo(a)Anthracene, mg/l	ND	ND	ND	ND	ND
Benzo(b)fluoranthene, mg/l	ND	ND	ND	ND	ND
Benzo(k)fluoranthene, mg/l	ND	ND	ND	ND	ND
Benzo(a)pyrene, mg/l	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene, mg/l	ND	ND	ND	ND	ND
Dibenz(a,h)anthracene, mg/l	ND	ND	ND	ND	ND
2-Chlorophenol, mg/l	ND	ND	ND	ND	ND
Phenol, mg/l	ND	ND	ND	ND	ND
2,4-Dimethylphenol, mg/l	ND	ND	ND	ND	ND
2,4,6-Trichlorophenol, mg/l	ND	ND	ND	ND	ND
4-Chloro-3-methylphenol, mg/l	ND	ND	ND	ND	ND
2,4-Dinitrophenol, mg/l	ND	ND	ND	ND	ND
Pentachlorophenol, mg/l	ND	ND	ND	ND	ND
2,4,5-Trichlorophenol, mg/l	ND	ND	ND	ND	ND
Carbazole, mg/l	ND	ND	ND	ND	ND
Tetrachlorophenols, mg/l	ND	ND	ND	ND	ND

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LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE SAMPLED
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46553-2	MW-8A (# 11438)	11-17-93
46553-3	MW-8 (# 11439)	11-17-93
46553-4	MW-9 (# 11440)	11-17-93
46553-5	MW-10 (# 11441)	11-17-93

PARAMETER	46553-1	46553-2	46553-3	46553-4	46553-5
Volatiles by GC/MS					
Chloromethane, mg/l	ND	ND	ND	ND	ND
Bromomethane, mg/l	ND	ND	ND	ND	ND
Vinyl Chloride, mg/l	ND	ND	ND	ND	ND
Chloroethane, mg/l	ND	ND	ND	ND	ND
Methylene Chloride (Dichloromethane), mg/l	ND	ND	ND	ND	ND
1,1-Dichloroethene, mg/l	ND	ND	ND	ND	ND
1,1-Dichloroethane, mg/l	ND	ND	ND	ND	ND
Trans-1,2-Dichloroethylene, mg/l	ND	ND	ND	ND	ND
1,2-Dichloroethane, mg/l	ND	ND	ND	ND	ND
1,1,1-Trichloroethane, mg/l	ND	ND	ND	ND	ND
Carbon Tetrachloride, mg/l	ND	ND	ND	ND	ND
Bromodichloromethane, mg/l	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane, mg/l	ND	ND	ND	ND	ND
1,2-Dichloropropane, mg/l	ND	ND	ND	ND	ND
Trichloroethene, mg/l	ND	ND	ND	ND	ND
Dibromochloromethane, mg/l	ND	ND	ND	ND	ND
1,1,2-Trichloroethane, mg/l	ND	ND	ND	ND	ND
Benzene, mg/l	ND	ND	ND	ND	ND

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46553-3	MW-8 (# 11439)	11-17-93
46553-4	MW-9 (# 11440)	11-17-93
46553-5	MW-10 (# 11441)	11-17-93

PARAMETER	46553-1	46553-2	46553-3	46553-4	46553-5
Cis-1,3-Dichloropropene, mg/l	ND	ND	ND	ND	ND
2-Chloroethylvinyl Ether, mg/l	ND	ND	ND	ND	ND
Toluene, mg/l	ND	ND	ND	ND	ND
Chlorobenzene, mg/l	ND	ND	ND	ND	ND
Ethylbenzene, mg/l	ND	ND	ND	ND	ND
Methyl-Tert-Butyl-Ether (MTBE), mg/l	ND	ND	ND	ND	ND
Dichlorodifluoromethane, mg/l	ND	ND	ND	ND	ND
m&p-Xylene, mg/l	ND	ND	ND	ND	ND
o-Xylene, mg/l	ND	ND	ND	ND	ND
Fluorotrichloromethane, mg/l	ND	ND	ND	ND	ND
1,2-Dibromoethane (EDB) , mg/l	ND	ND	ND	ND	ND
Arsenic, mg/l	ND	ND	ND	0.049	0.050
Arsenic (Dissolved), mg/l	ND	ND	ND	ND	ND
Chromium, mg/l	ND	ND	ND	ND	ND
Chromium (Dissolved), mg/l	ND	ND	ND	ND	ND
Copper, mg/l	ND	ND	ND	ND	ND
Copper (Dissolved), mg/l	ND	ND	ND	ND	ND

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE SAMPLED
46553-6	MW-20A (# 11442)	11-17-93
46553-7	MW-21 (# 11443)	11-17-93
46553-8	MW-23 (# 11444)	11-17-93
46553-9	MW-24A (# 11445)	11-17-93
46553-10	Trip Blank	11-17-93

PARAMETER	46553-6	46553-7	46553-8	46553-9	46553-10
Semivolatile Organics (8270)					
bis(2-Chloroethyl)ether, mg/l	ND	ND	ND	ND	ND
Naphthalene, mg/l	ND	ND	ND	ND	ND
Acenaphthene, mg/l	ND	ND	ND	ND	ND
Phenanthrene, mg/l	ND	ND	ND	ND	ND
Anthracene, mg/l	ND	ND	ND	ND	ND
Fluoranthene, mg/l	ND	ND	ND	ND	ND
Chrysene, mg/l	ND	ND	ND	ND	ND
Benzo(a)Anthracene, mg/l	ND	ND	ND	ND	ND
Benzo(b)fluoranthene, mg/l	ND	ND	ND	ND	ND
Benzo(k)fluoranthene, mg/l	ND	ND	ND	ND	ND
Benzo(a)pyrene, mg/l	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene, mg/l	ND	ND	ND	ND	ND
Dibenz(a,h)anthracene, mg/l	ND	ND	ND	ND	ND
2-Chlorophenol, mg/l	ND	ND	ND	ND	ND
Phenol, mg/l	ND	ND	ND	ND	ND
2,4-Dimethylphenol, mg/l	ND	ND	ND	ND	ND
2,4,6-Trichlorophenol, mg/l	ND	ND	ND	ND	ND
4-Chloro-3-methylphenol, mg/l	ND	ND	ND	ND	ND
2,4-Dinitrophenol, mg/l	ND	ND	ND	ND	ND
Pentachlorophenol, mg/l	ND	ND	ND	ND	ND
2,4,5-Trichlorophenol, mg/l	ND	ND	ND	ND	ND
Carbazole, mg/l	ND	ND	ND	ND	ND
Tetrachlorophenols, mg/l	ND	ND	ND	ND	ND

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46553-8	MW-23 (# 11444)	11-17-93
46553-9	MW-24A (# 11445)	11-17-93
46553-10	Trip Blank	11-17-93

PARAMETER	46553-6	46553-7	46553-8	46553-9	46553-10
Volatiles by GC/MS					
Chloromethane, mg/l	ND	ND	ND	ND	ND
Bromomethane, mg/l	ND	ND	ND	ND	ND
Vinyl Chloride, mg/l	ND	ND	ND	ND	ND
Chloroethane, mg/l	ND	ND	ND	ND	ND
Methylene Chloride (Dichloromethane), mg/l	ND	ND	ND	ND	ND
1,1-Dichloroethene, mg/l	ND	ND	ND	ND	ND
1,1-Dichloroethane, mg/l	ND	ND	ND	ND	ND
Trans-1,2-Dichloroethylene, mg/l	ND	ND	ND	ND	ND
1,2-Dichloroethane, mg/l	ND	ND	ND	ND	ND
1,1,1-Trichloroethane, mg/l	ND	ND	ND	ND	ND
Carbon Tetrachloride, mg/l	ND	ND	ND	ND	ND
Bromodichloromethane, mg/l	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane, mg/l	ND	ND	ND	ND	ND
1,2-Dichloropropane, mg/l	ND	ND	ND	ND	ND
Trichloroethene, mg/l	ND	ND	ND	ND	ND
Dibromochloromethane, mg/l	ND	ND	ND	ND	ND
1,1,2-Trichloroethane, mg/l	ND	ND	ND	ND	ND
Benzene, mg/l	ND	ND	ND	ND	ND

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46553-7	MW-21 (# 11443)	11-17-93
46553-8	MW-23 (# 11444)	11-17-93
46553-9	MW-24A (# 11445)	11-17-93
46553-10	Trip Blank	11-17-93

PARAMETER	46553-6	46553-7	46553-8	46553-9	46553-10
Cis-1,3-Dichloropropene, mg/l	ND	ND	ND	ND	ND
2-Chloroethylvinyl Ether, mg/l	ND	ND	ND	ND	ND
Toluene, mg/l	ND	ND	ND	ND	ND
Chlorobenzene, mg/l	ND	ND	ND	ND	ND
Ethylbenzene, mg/l	ND	ND	ND	ND	ND
Methyl-Tert-Butyl-Ether (MTBE), mg/l	ND	ND	ND	ND	ND
Dichlorodifluoromethane, mg/l	ND	ND	ND	ND	ND
m&p-Xylene, mg/l	ND	ND	ND	ND	ND
o-Xylene, mg/l	ND	ND	ND	ND	ND
Fluorotrichloromethane, mg/l	ND	ND	ND	ND	ND
1,2-Dibromoethane (EDB) , mg/l	ND	ND	ND	ND	ND
Arsenic, mg/l	ND	0.019	ND	ND	ND
Arsenic (Dissolved), mg/l	ND	ND	ND	ND	ND
Chromium, mg/l	ND	0.016	ND	ND	ND
Chromium (Dissolved), mg/l	ND	ND	ND	ND	ND
Copper, mg/l	ND	ND	ND	ND	ND
Copper (Dissolved), mg/l	ND	ND	ND	ND	ND

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Spartanburg, SC 29304

Project: Wilmington, NC
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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE SAMPLED
46553-11	Field Blank	11-17-93

PARAMETER	46553-11
Semivolatile Organics (8270)	
bis(2-Chloroethyl)ether, mg/l	ND
Naphthalene, mg/l	ND
Acenaphthene, mg/l	ND
Phenanthrene, mg/l	ND
Anthracene, mg/l	ND
Fluoranthene, mg/l	ND
Chrysene, mg/l	ND
Benzo(a)Anthracene, mg/l	ND
Benzo(b)fluoranthene, mg/l	ND
Benzo(k)fluoranthene, mg/l	ND
Benzo(a)pyrene, mg/l	ND
Indeno(1,2,3-cd)pyrene, mg/l	ND
Dibenz(a,h)anthracene, mg/l	ND
2-Chlorophenol, mg/l	ND
Phenol, mg/l	ND
2,4-Dimethylphenol, mg/l	ND
2,4,6-Trichlorophenol, mg/l	ND
4-Chloro-3-methylphenol, mg/l	ND
2,4-Dinitrophenol, mg/l	ND
Pentachlorophenol, mg/l	ND
2,4,5-Trichlorophenol, mg/l	ND
Carbazole, mg/l	ND
Tetrachlorophenols, mg/l	ND

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE SAMPLED
46553-11	Field Blank	11-17-93

PARAMETER	46553-11
Volatiles by GC/MS	
Chloromethane, mg/l	ND
Bromomethane, mg/l	ND
Vinyl Chloride, mg/l	ND
Chloroethane, mg/l	ND
Methylene Chloride (Dichloromethane), mg/l	ND
1,1-Dichloroethene, mg/l	ND
1,1-Dichloroethane, mg/l	ND
Trans-1,2-Dichloroethylene, mg/l	ND
1,2-Dichloroethane, mg/l	ND
1,1,1-Trichloroethane, mg/l	ND
Carbon Tetrachloride, mg/l	ND
Bromodichloromethane, mg/l	ND
1,1,2,2-Tetrachloroethane, mg/l	ND
1,2-Dichloropropane, mg/l	ND
Trichloroethene, mg/l	ND
Dibromochloromethane, mg/l	ND
1,1,2-Trichloroethane, mg/l	ND
Benzene, mg/l	ND
Cis-1,3-Dichloropropene, mg/l	ND
2-Chloroethylvinyl Ether, mg/l	ND
Toluene, mg/l	ND
Chlorobenzene, mg/l	ND
Ethylbenzene, mg/l	ND

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE SAMPLED
46553-11	Field Blank	11-17-93

PARAMETER	46553-11
Methyl-Tert-Butyl-Ether (MTBE), mg/l	ND
Dichlorodifluoromethane, mg/l	ND
m&p-Xylene, mg/l	ND
o-Xylene, mg/l	ND
Fluorotrichloromethane, mg/l	ND
1,2-Dibromoethane (EDB) , mg/l	ND
Arsenic, mg/l	ND
Arsenic (Dissolved), mg/l	ND
Chromium, mg/l	ND
Chromium (Dissolved), mg/l	ND
Copper, mg/l	ND
Copper (Dissolved), mg/l	ND

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE SAMPLED
46553-12	MW-6 (# 11435)	11-17-93
46553-13	MW-18 (# 11436)	11-17-93

PARAMETER	46553-12	46553-13
Semivolatile Organics (8270)		
bis(2-Chloroethyl)ether, mg/l	ND	ND
Naphthalene, mg/l	ND	ND
Acenaphthene, mg/l	ND	ND
Phenanthrene, mg/l	ND	ND
Anthracene, mg/l	ND	ND
Fluoranthene, mg/l	ND	ND
Chrysene, mg/l	ND	ND
Benzo(a)Anthracene, mg/l	ND	ND
Benzo(b)fluoranthene, mg/l	ND	ND
Benzo(k)fluoranthene, mg/l	ND	ND
Benzo(a)pyrene, mg/l	ND	ND
Indeno(1,2,3-cd)pyrene, mg/l	ND	ND
Dibenz(a,h)anthracene, mg/l	ND	ND
2-Chlorophenol, mg/l	ND	ND
Phenol, mg/l	ND	ND
2,4-Dimethylphenol, mg/l	ND	ND
2,4,6-Trichlorophenol, mg/l	ND	ND
4-Chloro-3-methylphenol, mg/l	ND	ND
2,4-Dinitrophenol, mg/l	ND	ND
Pentachlorophenol, mg/l	ND	ND
2,4,5-Trichlorophenol, mg/l	ND	ND
Carbazole, mg/l	ND	ND
Tetrachlorophenols, mg/l	ND	ND

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5102 LaRoche Avenue • Savannah, GA 31404 • (912) 354-7858 • Fax (912) 352-0165

RECEIVED
JAN 0 3 1994
ENVIRONMENTAL

LOG NO: S3-46553

Received: 18 NOV 93

Ms. Sandra Watson
Southern Wood Piedmont (WI)
P.O. Box 5477, I-85 and Sigsbee Rd.
Spartanburg, SC 29304

Project: Wilmington, NC
Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE SAMPLED
46553-12	MW-6 (# 11435)	11-17-93
46553-13	MW-18 (# 11436)	11-17-93

PARAMETER	46553-12	46553-13
Volatiles by GC/MS		
Chloromethane, mg/l	ND	ND
Bromomethane, mg/l	ND	ND
Vinyl Chloride, mg/l	ND	ND
Chloroethane, mg/l	ND	ND
Methylene Chloride (Dichloromethane), mg/l	ND	ND
1,1-Dichloroethene, mg/l	ND	ND
1,1-Dichloroethane, mg/l	ND	ND
Trans-1,2-Dichloroethylene, mg/l	ND	ND
1,2-Dichloroethane, mg/l	ND	ND
1,1,1-Trichloroethane, mg/l	ND	ND
Carbon Tetrachloride, mg/l	ND	ND
Bromodichloromethane, mg/l	ND	ND
1,1,2,2-Tetrachloroethane, mg/l	ND	ND
1,2-Dichloropropane, mg/l	ND	ND
Trichloroethene, mg/l	ND	ND
Dibromochloromethane, mg/l	ND	ND
1,1,2-Trichloroethane, mg/l	ND	ND
Benzene, mg/l	ND	ND
Cis-1,3-Dichloropropene, mg/l	ND	ND
2-Chloroethylvinyl Ether, mg/l	ND	ND
Toluene, mg/l	ND	ND
Chlorobenzene, mg/l	ND	ND

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Project: Wilmington, NC
Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE SAMPLED
46553-12	MW-6 (# 11435)	11-17-93
46553-13	MW-18 (# 11436)	11-17-93

PARAMETER	46553-12	46553-13
Ethylbenzene, mg/l	ND	ND
Methyl-Tert-Butyl-Ether (MTBE), mg/l	ND	ND
Dichlorodifluoromethane, mg/l	ND	ND
m&p-Xylene, mg/l	ND	ND
o-Xylene, mg/l	ND	ND
Fluorotrichloromethane, mg/l	ND	ND
1,2-Dibromoethane (EDB) , mg/l	ND	ND
Arsenic, mg/l	ND	0.016
Arsenic (Dissolved), mg/l	ND	ND
Chromium, mg/l	ND	4.6
Chromium (Dissolved), mg/l	ND	ND
Copper, mg/l	ND	0.050
Copper (Dissolved), mg/l	ND	ND
Hydrocarbons (Modified 8015 - Ext.)		
Hydrocarbons as Kerosene, mg/l	ND	ND
Hydrocarbons as Heavy Oils, mg/l	ND	ND
Hydrocarbons as Mineral Spirits, mg/l	ND	ND
Hydrocarbons as Varsol, mg/l	ND	ND
Hydrocarbons as Fuel Oil/Diesel, mg/l	ND	ND
Hydrocarbons (Modified 8015)		
Hydrocarbons as Gasoline, mg/l	ND	ND

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LOG NO: S3-46553

RECEIVED JAN 03 1994 ENVIRONMENTAL AFFAIRS

Received: 18 NOV 93

Ms. Sandra Watson
Southern Wood Piedmont (WI)
P.O. Box 5477, I-85 and Sigsbee Rd.
Spartanburg, SC 29304

Project: Wilmington, NC
Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES
46553-14	Detection Limits
46553-15	Accuracy (mean % recovery)
46553-16	Precision (% RPD)
46553-17	Analyst Initials)
46553-18	EPA Method Numbers

PARAMETER	46553-14	46553-15	46553-16	46553-17	46553-18
Semivolatile Organics (8270)					
1,4-Dichlorobenzene, mg/l	0.010	85 %	14 %	BK	8270
bis(2-Chloroethyl)ether, mg/l	0.010	---	---	BK	8270
N-Nitrosodi-N-Propylamine, mg/l	0.010	115 %	10 %	BK	8270
1,2,4-Trichlorobenzene, mg/l	0.010	93 %	13 %	BK	8270
Naphthalene, mg/l	0.010	---	---	BK	8270
Acenaphthene, mg/l	0.010	96 %	10 %	BK	8270
2,4-Dinitrotoluene, mg/l	0.010	116 %	12 %	BK	8270
Phenanthrene, mg/l	0.010	---	---	BK	8270
Anthracene, mg/l	0.010	---	---	BK	8270
Fluoranthene, mg/l	0.010	---	---	BK	8270
Pyrene, mg/l	0.010	113 %	11 %	BK	8270
Chrysene, mg/l	0.010	---	---	BK	8270
Benzo(a)Anthracene, mg/l	0.010	---	---	BK	8270
Benzo(b)fluoranthene, mg/l	0.010	---	---	BK	8270
Benzo(k)fluoranthene, mg/l	0.010	---	---	BK	8270
Benzo(a)pyrene, mg/l	0.010	---	---	BK	8270
Indeno(1,2,3-cd)pyrene, mg/l	0.010	---	---	BK	8270
Dibenz(a,h)anthracene, mg/l	0.010	---	---	BK	8270
2-Chlorophenol, mg/l	0.010	85 %	14 %	BK	8270

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Project: Wilmington, NC
Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES
46553-14	Detection Limits
46553-15	Accuracy (mean % recovery)
46553-16	Precision (% RPD)
46553-17	Analyst Initials)
46553-18	EPA Method Numbers

PARAMETER	46553-14	46553-15	46553-16	46553-17	46553-18
Phenol, mg/l	0.010	86 %	13 %	BK	8270
2,4-Dimethylphenol, mg/l	0.010	---	---	BK	8270
2,4,6-Trichlorophenol, mg/l	0.010	---	---	BK	8270
4-Chloro-3-methylphenol, mg/l	0.010	89 %	10 %	BK	8270
2,4-Dinitrophenol, mg/l	0.050	---	---	BK	8270
Pentachlorophenol, mg/l	0.050	61 %	16 %	BK	8270
4-Nitrophenol, mg/l	0.050	78 %	13 %	BK	8270
2,4,5-Trichlorophenol, mg/l	0.010	---	---	BK	8270
Carbazole, mg/l	0.010	---	---	BK	8270
Tetrachlorophenols, mg/l	0.010	---	---	BK	8270

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RECEIVED JAN 03 1994 ENVIRONMENTAL

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Southern Wood Piedmont (WI)
P.O. Box 5477, I-85 and Sigsbee Rd.
Spartanburg, SC 29304

Project: Wilmington, NC
Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES
46553-14	Detection Limits
46553-15	Accuracy (mean % recovery)
46553-16	Precision (% RPD)
46553-17	Analyst Initials)
46553-18	EPA Method Numbers

PARAMETER	46553-14	46553-15	46553-16	46553-17	46553-18
Volatiles by GC/MS					
Chloromethane, mg/l	0.010	---	---	KA	8240
Bromomethane, mg/l	0.010	---	---	KA	8240
Vinyl Chloride, mg/l	0.010	---	---	KA	8240
Chloroethane, mg/l	0.010	---	---	KA	8240
Methylene Chloride (Dichloromethane), mg/l	0.0050	---	---	KA	8240
1,1-Dichloroethene, mg/l	0.0050	80 %	8.7 %	KA	8240
1,1-Dichloroethane, mg/l	0.0050	---	---	KA	8240
Trans-1,2-Dichloroethylene, mg/l	0.0050	---	---	KA	8240
1,2-Dichloroethane, mg/l	0.0050	---	---	KA	8240
1,1,1-Trichloroethane, mg/l	0.0050	---	---	KA	8240
Carbon Tetrachloride, mg/l	0.0050	---	---	KA	8240
Bromodichloromethane, mg/l	0.0050	---	---	KA	8240
1,1,2,2-Tetrachloroethane, mg/l	0.0050	---	---	KA	8240
1,2-Dichloropropane, mg/l	0.0050	---	---	KA	8240
Trichloroethene, mg/l	0.0050	95 %	11 %	KA	8240
Dibromochloromethane, mg/l	0.0050	---	---	KA	8240
1,1,2-Trichloroethane, mg/l	0.0050	---	---	KA	8240
Benzene, mg/l	0.0050	107 %	15 %	KA	8240

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES
46553-14	Detection Limits
46553-15	Accuracy (mean % recovery)
46553-16	Precision (% RPD)
46553-17	Analyst Initials)
46553-18	EPA Method Numbers

PARAMETER	46553-14	46553-15	46553-16	46553-17	46553-18
Cis-1,3-Dichloropropene, mg/l	0.0050	---	---	KA	8240
2-Chloroethylvinyl Ether, mg/l	0.050	---	---	KA	8240
Toluene, mg/l	0.0050	103 %	9.3 %	KA	8240
Chlorobenzene, mg/l	0.0050	112 %	8.0 %	KA	8240
Ethylbenzene, mg/l	0.0050	---	---	KA	8240
Methyl-Tert-Butyl-Ether (MTBE), mg/l	0.010	---	---	KA	8240
Dichlorodifluoromethane, mg/l	0.0050	---	---	KA	8240
m&p-Xylene, mg/l	0.0050	---	---	KA	8240
o-Xylene, mg/l	0.0050	---	---	KA	8240
Fluorotrichloromethane, mg/l	0.0050	---	---	KA	8240
1,2-Dibromoethane (EDB) , mg/l	0.0050	---	---	KA	8240
Arsenic, mg/l	0.010	103 %	2.3 %	CH	7060
Arsenic (Dissolved), mg/l	0.010	110 %	1.5 %	CH	7060
Chromium, mg/l	0.010	100 %	0.39 %	AL	6010
Chromium (Dissolved), mg/l	0.010	99 %	0.26 %	AL	6010
Copper, mg/l	0.025	100 %	0.60 %	AL	6010
Copper (Dissolved), mg/l	0.025	99 %	0.14 %	AL	6010

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Project: Wilmington, NC
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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES
46553-14	Detection Limits
46553-15	Accuracy (mean % recovery)
46553-16	Precision (% RPD)
46553-17	Analyst Initials)
46553-18	EPA Method Numbers

PARAMETER	46553-14	46553-15	46553-16	46553-17	46553-18
Hydrocarbons (Modified 8015 - Ext.)					
Hydrocarbons as Kerosene, mg/l	0.30	---	---	LM	8015
Hydrocarbons as Heavy Oils, mg/l	1.0	---	---	LM	8015
Hydrocarbons as Mineral Spirits, mg/l	0.30	---	---	LM	8015
Hydrocarbons as Varsol, mg/l	0.30	---	---	LM	8015
Hydrocarbons as Fuel Oil/Diesel, mg/l	0.30	78 %	15 %	LM	8015
Hydrocarbons (Modified 8015)					
Hydrocarbons as Gasoline, mg/l	0.050	94 %	2.1 %	SLG	8015

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES
46553-19	Dates Extracted
46553-20	Dates Analyzed

PARAMETER	46553-19	46553-20
Semivolatile Organics (8270)		
bis(2-Chloroethyl)ether	11.23.93	12.02.93
Naphthalene	11.23.93	12.02.93
Acenaphthene	11.23.93	12.02.93
Phenanthrene	11.23.93	12.02.93
Anthracene	11.23.93	12.02.93
Fluoranthene	11.23.93	12.02.93
Chrysene	11.23.93	12.02.93
Benzo(a)Anthracene	11.23.93	12.02.93
Benzo(b)fluoranthene	11.23.93	12.02.93
Benzo(k)fluoranthene	11.23.93	12.02.93
Benzo(a)pyrene	11.23.93	12.02.93
Indeno(1,2,3-cd)pyrene	11.23.93	12.02.93
Dibenz(a,h)anthracene	11.23.93	12.02.93
2-Chlorophenol	11.23.93	12.02.93
Phenol	11.23.93	12.02.93
2,4-Dimethylphenol	11.23.93	12.02.93
2,4,6-Trichlorophenol	11.23.93	12.02.93
4-Chloro-3-methylphenol	11.23.93	12.02.93
2,4-Dinitrophenol	11.23.93	12.02.93
Pentachlorophenol	11.23.93	12.02.93
2,4,5-Trichlorophenol	11.23.93	12.02.93

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES
46553-19	Dates Extracted
46553-20	Dates Analyzed

PARAMETER	46553-19	46553-20
Volatiles by GC/MS		
Chloromethane	---	11.25.93
Bromomethane	---	11.25.93
Vinyl Chloride	---	11.25.93
Chloroethane	---	11.25.93
Methylene Chloride (Dichloromethane)	---	11.25.93
1,1-Dichloroethene	---	11.25.93
1,1-Dichloroethane	---	11.25.93
Trans-1,2-Dichloroethylene	---	11.25.93
1,2-Dichloroethane	---	11.25.93
1,1,1-Trichloroethane	---	11.25.93
Carbon Tetrachloride	---	11.25.93
Bromodichloromethane	---	11.25.93
1,1,2,2-Tetrachloroethane	---	11.25.93
1,2-Dichloropropane	---	11.25.93
Trichloroethene	---	11.25.93
Dibromochloromethane	---	11.25.93
1,1,2-Trichloroethane	---	11.25.93
Benzene	---	11.25.93
Cis-1,3-Dichloropropene	---	11.25.93
2-Chloroethylvinyl Ether	---	11.25.93
Toluene	---	11.25.93
Chlorobenzene	---	11.25.93

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LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES
46553-19	Dates Extracted
46553-20	Dates Analyzed

PARAMETER	46553-19	46553-20
Ethylbenzene	---	11.25.93
Methyl-Tert-Butyl-Ether (MTBE)	---	11.25.93
Dichlorodifluoromethane	---	11.25.93
m&p-Xylene	---	11.25.93
o-Xylene	---	11.25.93
Fluorotrichloromethane	---	11.25.93
1,2-Dibromoethane (EDB)	---	11.25.93
Fluorotrichlorome	---	---
M/P-Xylenes	---	---
O-Xylenes	---	---
Arsenic	---	12.07.93
Arsenic (Dissolved)	---	12.07.93
Chromium	---	12.07.93
Chromium (Dissolved)	---	12.08.93
Copper	---	12.07.93
Copper (Dissolved)	---	12.08.93
Hydrocarbons (Modified 8015 - Ext.)		
Hydrocarbons as Kerosene	11.23.93	12.05.93
Hydrocarbons as Heavy Oils	11.23.93	12.05.93
Hydrocarbons as Mineral Spirits	11.23.93	12.05.93
Hydrocarbons as Varsol	11.23.93	12.05.93
Hydrocarbons as Fuel Oil/Diesel	11.23.93	12.05.93

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES
46553-19	Dates Extracted
46553-20	Dates Analyzed

PARAMETER	46553-19	46553-20
Hydrocarbons (Modified 8015)		
Hydrocarbons as Gasoline	---	11.24.93

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Project: Wilmington, NC
Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES
46553-21	Report Completion Date

PARAMETER	46553-21
Date Reported	12.30.93

Methods: EPA SW-846
ND = Not Detected

J. W. Andrews, Ph. D.

Final Page Of Report

SL SAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC.

05184

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☐ 2846 Industrial Plaza Drive, Tallahassee, FL 32301 Phone: (904) 878-3994 Fax (904) 878-9504
☐ 414 Southwest 12th Avenue, Deerfield Beach, FL 33442 Phone: (305) 421-7400 Fax (305) 421-2584
☐ 900 Lakeside Drive, Mobile, AL 36693 Phone: (205) 666-6633 Fax (205) 666-6696
☐ 6712 Benjamin Road, Suite 100, Tampa, FL 33634 Phone: (813) 885-7427 Fax (813) 885-7049

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

P.O. NUMBER	PROJECT NUMBER	PROJECT NAME
	12-53015.00	SWP-Wilmington

Wilmington Site Specific

MATRIX TYPE: AQUEOUS MATRIX / NONAQUEOUS MATRIX / OIL MATRIX / AIR MATRIX

REQUIRED ANALYSES: SV, VOC, Total Cr, Cu, As, Dissolved Cr, Cu, As, TPH Diesel, TPH GAS & MTBE

PAGE 1 OF 1

CLIENT NAME: ViroGroup, Inc.

TELEPHONE/FAX NO.: 803-957-6270, 803-957-3845

CLIENT ADDRESS: 1445 Pisgah Church Rd

CITY, STATE, ZIP CODE: Lexington, SC 29072

SAMPLER(S) NAME(S): Greg Kuntz, James Leaphart

CLIENT PROJECT MANAGER: Greg Kuntz

☒ STANDARD TAT
☐ EXPEDITED TAT *

REPORT DUE DATE _____

* SUBJECT TO RUSH FEES

SAMPLING DATE	SAMPLING TIME	SAMPLE IDENTIFICATION	AQUEOUS MATRIX	NONAQUEOUS MATRIX	OIL MATRIX	AIR MATRIX	SV	VOC	Total Cr, Cu, As	Dissolved Cr, Cu, As	TPH Diesel	TPH GAS & MTBE					
			NUMBER OF CONTAINERS SUBMITTED														
11-17-93	2:20	MW-6 SWP Log# 11435	X				2	3	1	1	2	3					
	2:50	MW-18 11436															
	3:10	MW-7 11437															
	3:20	MW-8A 11438															
	3:40	MW-8 11439															
	3:50	MW-9 11440															
	4:00	MW-10 11441															
	4:15	MW-20A 11442															
	4:30	MW-21 11443															
	4:40	MW-23 11444															
	4:50	MW-24A 11445															
	5:15	Field Blank Trip Blank															

RECEIVED JAN 03 1994 ENVIRONMENTAL

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
[signature]	11/17	12:00	Gregory B. Kuntz	11/16/93	7:30			
RECEIVED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
			Gregory B. Kuntz	11/17/93	6:20	[signature]	11-17-93	6:20

FOR SAVANNAH LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	S.L. LOG NO.	LABORATORY REMARKS
J. Baker	11/18/93	10:20	☒ YES ☐ NO		46553	

SL SAVANNAH LABORATORIES
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SJW
MAS
E. Kurtz - EFE

LOG NO: S3-46595

Received: 19 NOV 93

Ms. Sandra Watson
Southern Wood Piedmont (WI)
P.O. Box 5477, I-85 and Sigsbee Rd
Spartanburg, SC 29304

RECEIVED
JAN 03 1994
ENVIRONMENTAL

Project: Wilmington, NC
Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE SAMPLED
46595-1	MW-29 (# 11484)	11-18-93
46595-2	MW-29A (# 11485)	11-18-93
46595-3	MW-30 (# 11486)	11-18-93
46595-4	MW-25 (# 11487)	11-18-93
46595-5	MW-20 (# 11488)	11-18-93

PARAMETER	46595-1	46595-2	46595-3	46595-4	46595-5
Semivolatile Organics (8270)					
bis(2-Chloroethyl)ether, mg/l	ND	ND	ND	ND	ND
Naphthalene, mg/l	ND	ND	ND	ND	ND
Acenaphthene, mg/l	ND	0.54	0.040	0.043	0.014
Phenanthrene, mg/l	ND	ND	0.058	0.062	ND
Anthracene, mg/l	ND	ND	0.026	0.025	ND
Fluoranthene, mg/l	ND	ND	0.016	0.034	ND
Chrysene, mg/l	ND	ND	ND	ND	ND
Benzo(a)Anthracene, mg/l	ND	ND	ND	ND	ND
Benzo(b)fluoranthene, mg/l	ND	ND	ND	ND	ND
Benzo(k)fluoranthene, mg/l	ND	ND	ND	ND	ND
Benzo(a)pyrene, mg/l	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene, mg/l	ND	ND	ND	ND	ND
Dibenz(a,h)anthracene, mg/l	ND	ND	ND	ND	ND
2-Chlorophenol, mg/l	ND	ND	ND	ND	ND
Phenol, mg/l	ND	ND	ND	ND	ND
2,4-Dimethylphenol, mg/l	ND	ND	ND	ND	ND
2,4,6-Trichlorophenol, mg/l	ND	ND	ND	ND	ND
4-Chloro-3-methylphenol, mg/l	ND	ND	ND	ND	ND
2,4-Dinitrophenol, mg/l	ND	ND	ND	ND	ND
Pentachlorophenol, mg/l	ND	ND	ND	ND	ND
2,4,5-Trichlorophenol, mg/l	ND	ND	ND	ND	ND
Tetrachlorophenols, mg/l	ND	ND	ND	ND	ND
Carbazole, mg/l	ND	0.019	0.013	ND	ND

SL SAVANNAH LABORATORIES
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LOG NO: S3-46595

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Ms. Sandra Watson
Southern Wood Piedmont (WI)
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Spartanburg, SC 29304

Project: Wilmington, NC
Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE SAMPLED
46595-1	MW-29 (# 11484)	11-18-93
46595-2	MW-29A (# 11485)	11-18-93
46595-3	MW-30 (# 11486)	11-18-93
46595-4	MW-25 (# 11487)	11-18-93
46595-5	MW-20 (# 11488)	11-18-93

PARAMETER	46595-1	46595-2	46595-3	46595-4	46595-5
Volatiles by GC/MS					
Chloromethane, mg/l	ND	ND	ND	ND	ND
Bromomethane, mg/l	ND	ND	ND	ND	ND
Vinyl Chloride, mg/l	ND	ND	ND	ND	ND
Chloroethane, mg/l	ND	ND	ND	ND	ND
Methylene Chloride (Dichloromethane), mg/l	ND	ND	ND	ND	ND
1,1-Dichloroethene, mg/l	ND	ND	ND	ND	ND
1,1-Dichloroethane, mg/l	ND	ND	ND	ND	ND
Trans-1,2-Dichloroethylene, mg/l	ND	ND	ND	ND	ND
1,2-Dichloroethane, mg/l	ND	ND	ND	ND	ND
1,1,1-Trichloroethane, mg/l	ND	ND	ND	ND	ND
Carbon Tetrachloride, mg/l	ND	ND	ND	ND	ND
Bromodichloromethane, mg/l	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane, mg/l	ND	ND	ND	ND	ND
1,2-Dichloropropane, mg/l	ND	ND	ND	ND	ND
Trichloroethene, mg/l	ND	ND	ND	ND	ND
Dibromochloromethane, mg/l	ND	ND	ND	ND	ND
1,1,2-Trichloroethane, mg/l	ND	ND	ND	ND	ND
Benzene, mg/l	ND	ND	ND	ND	ND

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Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE SAMPLED
46595-1	MW-29 (# 11484)	11-18-93
46595-2	MW-29A (# 11485)	11-18-93
46595-3	MW-30 (# 11486)	11-18-93
46595-4	MW-25 (# 11487)	11-18-93
46595-5	MW-20 (# 11488)	11-18-93

PARAMETER	46595-1	46595-2	46595-3	46595-4	46595-5
Cis-1,3-Dichloropropene, mg/l	ND	ND	ND	ND	ND
2-Chloroethylvinyl Ether, mg/l	ND	ND	ND	ND	ND
Toluene, mg/l	ND	ND	ND	ND	ND
Chlorobenzene, mg/l	ND	ND	ND	ND	ND
Ethylbenzene, mg/l	ND	ND	ND	ND	ND
Dichlorodifluoromethane, mg/l	ND	ND	ND	ND	ND
Methyl-Tert-Butyl-Ether (MTBE), mg/l	ND	ND	ND	ND	ND
1,2-Dibromomethane, mg/l	ND	ND	ND	ND	ND
o-Xylene, mg/l	ND	ND	ND	ND	ND
m&p-Xylene, mg/l	ND	ND	ND	ND	ND
Fluorotrichloromethane, mg/l	ND	ND	ND	ND	ND
Arsenic, mg/l	ND	ND	ND	ND	ND
Arsenic (Dissolved), mg/l	ND	ND	ND	ND	ND
Chromium, mg/l	ND	ND	0.024	0.011	ND
Chromium (Dissolved), mg/l	ND	ND	ND	ND	ND
Copper, mg/l	ND	ND	ND	ND	ND
Copper (Dissolved), mg/l	ND	ND	ND	ND	ND

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Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE SAMPLED
46595-6	MW-11B (# 11489)	11-18-93
46595-7	MW-19A (# 11490)	11-18-93
46595-8	MW-28A (# 11491)	11-18-93
46595-9	MW-22A (# 11492)	11-18-93
46595-10	MW-15 (# 11493)	11-18-93

PARAMETER	46595-6	46595-7	46595-8	46595-9	46595-10
Semivolatile Organics (8270)					
bis(2-Chloroethyl)ether, mg/l	ND	ND	ND	ND	ND
Naphthalene, mg/l	ND	ND	ND	0.018	0.055
Acenaphthene, mg/l	0.081	ND	ND	0.012	0.074
Phenanthrene, mg/l	0.039	ND	ND	ND	0.015
Anthracene, mg/l	ND	ND	ND	ND	ND
Fluoranthene, mg/l	ND	ND	ND	ND	ND
Chrysene, mg/l	ND	ND	ND	ND	ND
Benzo(a)Anthracene, mg/l	ND	ND	ND	ND	ND
Benzo(b)fluoranthene, mg/l	ND	ND	ND	ND	ND
Benzo(k)fluoranthene, mg/l	ND	ND	ND	ND	ND
Benzo(a)pyrene, mg/l	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene, mg/l	ND	ND	ND	ND	ND
Dibenz(a,h)anthracene, mg/l	ND	ND	ND	ND	ND
2-Chlorophenol, mg/l	ND	ND	ND	ND	ND
Phenol, mg/l	ND	ND	ND	ND	ND
2,4-Dimethylphenol, mg/l	ND	ND	ND	ND	ND
2,4,6-Trichlorophenol, mg/l	ND	ND	ND	ND	ND
4-Chloro-3-methylphenol, mg/l	ND	ND	ND	ND	ND
2,4-Dinitrophenol, mg/l	ND	ND	ND	ND	ND
Pentachlorophenol, mg/l	ND	ND	ND	ND	ND
2,4,5-Trichlorophenol, mg/l	ND	ND	ND	ND	ND
Tetrachlorophenols, mg/l	ND	ND	ND	ND	ND
Carbazole, mg/l	ND	ND	ND	ND	ND

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REPORT OF RESULTS

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46595-6	MW-11B (# 11489)	11-18-93
46595-7	MW-19A (# 11490)	11-18-93
46595-8	MW-28A (# 11491)	11-18-93
46595-9	MW-22A (# 11492)	11-18-93
46595-10	MW-15 (# 11493)	11-18-93

PARAMETER	46595-6	46595-7	46595-8	46595-9	46595-10
Volatiles by GC/MS					
Chloromethane, mg/l	ND	ND	ND	ND	ND
Bromomethane, mg/l	ND	ND	ND	ND	ND
Vinyl Chloride, mg/l	ND	ND	ND	ND	ND
Chloroethane, mg/l	ND	ND	ND	ND	ND
Methylene Chloride (Dichloromethane), mg/l	ND	ND	ND	ND	ND
1,1-Dichloroethene, mg/l	ND	ND	ND	ND	ND
1,1-Dichloroethane, mg/l	ND	ND	ND	ND	ND
Trans-1,2-Dichloroethylene, mg/l	ND	ND	ND	ND	ND
1,2-Dichloroethane, mg/l	ND	ND	ND	ND	ND
1,1,1-Trichloroethane, mg/l	ND	ND	ND	ND	ND
Carbon Tetrachloride, mg/l	ND	ND	ND	ND	ND
Bromodichloromethane, mg/l	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane, mg/l	ND	ND	ND	ND	ND
1,2-Dichloropropane, mg/l	ND	ND	ND	ND	ND
Trichloroethene, mg/l	ND	ND	ND	ND	ND
Dibromochloromethane, mg/l	ND	ND	ND	ND	ND
1,1,2-Trichloroethane, mg/l	ND	ND	ND	ND	ND
Benzene, mg/l	ND	ND	ND	ND	ND

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REPORT OF RESULTS

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46595-7	MW-19A (# 11490)	11-18-93
46595-8	MW-28A (# 11491)	11-18-93
46595-9	MW-22A (# 11492)	11-18-93
46595-10	MW-15 (# 11493)	11-18-93

PARAMETER	46595-6	46595-7	46595-8	46595-9	46595-10
Cis-1,3-Dichloropropene, mg/l	ND	ND	ND	ND	ND
2-Chloroethylvinyl Ether, mg/l	ND	ND	ND	ND	ND
Toluene, mg/l	ND	ND	ND	ND	ND
Chlorobenzene, mg/l	ND	ND	ND	ND	ND
Ethylbenzene, mg/l	ND	ND	ND	ND	0.0051
Dichlorodifluoromethane, mg/l	ND	ND	ND	ND	ND
Methyl-Tert-Butyl-Ether (MTBE), mg/l	ND	ND	ND	ND	ND
1,2-Dibromomethane, mg/l	ND	ND	ND	ND	ND
o-Xylene, mg/l	ND	ND	ND	0.0060	ND
m&p-Xylene, mg/l	ND	ND	ND	0.0061	ND
Fluorotrichloromethane, mg/l	ND	ND	ND	ND	ND
Arsenic, mg/l	ND	ND	ND	ND	0.088
Arsenic (Dissolved), mg/l	ND	ND	ND	ND	ND
Chromium, mg/l	ND	ND	ND	ND	ND
Chromium (Dissolved), mg/l	ND	ND	ND	ND	ND
Copper, mg/l	ND	ND	ND	ND	ND
Copper (Dissolved), mg/l	ND	ND	ND	ND	ND

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LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE SAMPLED
46595-11	MW-19 (# 11495)	11-18-93
46595-12	MW-24 (# 11496)	11-18-93
46595-13	MW-11A (# 11497)	11-18-93
46595-14	MW-14A (# 11498)	11-18-93
46595-15	MW-28 (# 11499)	11-18-93

PARAMETER	46595-11	46595-12	46595-13	46595-14	46595-15
Semivolatile Organics (8270)					
bis(2-Chloroethyl)ether, mg/l	ND	ND	ND	ND	ND
Naphthalene, mg/l	0.29	0.29	0.31	3.3	ND
Acenaphthene, mg/l	0.27	0.29	0.076	0.41	0.012
Phenanthrene, mg/l	0.077	0.068	0.047	ND	0.021
Anthracene, mg/l	ND	ND	ND	ND	ND
Fluoranthene, mg/l	ND	ND	ND	ND	ND
Chrysene, mg/l	ND	ND	ND	ND	ND
Benzo(a)Anthracene, mg/l	ND	ND	ND	ND	ND
Benzo(b)fluoranthene, mg/l	ND	ND	ND	ND	ND
Benzo(k)fluoranthene, mg/l	ND	ND	ND	ND	ND
Benzo(a)pyrene, mg/l	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene, mg/l	ND	ND	ND	ND	ND
Dibenz(a,h)anthracene, mg/l	ND	ND	ND	ND	ND
2-Chlorophenol, mg/l	ND	ND	ND	ND	ND
Phenol, mg/l	ND	ND	ND	ND	ND
2,4-Dimethylphenol, mg/l	ND	ND	ND	ND	ND
2,4,6-Trichlorophenol, mg/l	ND	ND	ND	ND	ND
4-Chloro-3-methylphenol, mg/l	ND	ND	ND	ND	ND
2,4-Dinitrophenol, mg/l	ND	ND	ND	ND	ND
Pentachlorophenol, mg/l	ND	ND	ND	ND	ND
2,4,5-Trichlorophenol, mg/l	ND	ND	ND	ND	ND
Tetrachlorophenols, mg/l	ND	ND	ND	ND	ND
Carbazole, mg/l	ND	ND	ND	ND	ND

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE SAMPLED
46595-11	MW-19 (# 11495)	11-18-93
46595-12	MW-24 (# 11496)	11-18-93
46595-13	MW-11A (# 11497)	11-18-93
46595-14	MW-14A (# 11498)	11-18-93
46595-15	MW-28 (# 11499)	11-18-93

PARAMETER	46595-11	46595-12	46595-13	46595-14	46595-15
Volatiles by GC/MS					
Chloromethane, mg/l	ND	ND	ND	ND	ND
Bromomethane, mg/l	ND	ND	ND	ND	ND
Vinyl Chloride, mg/l	ND	ND	ND	ND	ND
Chloroethane, mg/l	ND	ND	ND	ND	ND
Methylene Chloride (Dichloromethane), mg/l	ND	ND	ND	ND	ND
1,1-Dichloroethene, mg/l	ND	ND	ND	ND	ND
1,1-Dichloroethane, mg/l	ND	ND	ND	ND	ND
Trans-1,2-Dichloroethylene, mg/l	ND	ND	ND	ND	ND
1,2-Dichloroethane, mg/l	ND	ND	ND	ND	ND
1,1,1-Trichloroethane, mg/l	ND	ND	ND	ND	ND
Carbon Tetrachloride, mg/l	ND	ND	ND	ND	ND
Bromodichloromethane, mg/l	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane, mg/l	ND	ND	ND	ND	ND
1,2-Dichloropropane, mg/l	ND	ND	ND	ND	ND
Trichloroethene, mg/l	ND	ND	ND	ND	ND
Dibromochloromethane, mg/l	ND	ND	ND	ND	ND
1,1,2-Trichloroethane, mg/l	ND	ND	ND	ND	ND
Benzene, mg/l	0.0055	ND	ND	ND	ND

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE SAMPLED
46595-11	MW-19 (# 11495)	11-18-93
46595-12	MW-24 (# 11496)	11-18-93
46595-13	MW-11A (# 11497)	11-18-93
46595-14	MW-14A (# 11498)	11-18-93
46595-15	MW-28 (# 11499)	11-18-93

PARAMETER	46595-11	46595-12	46595-13	46595-14	46595-15
Cis-1,3-Dichloropropene, mg/l	ND	ND	ND	ND	ND
2-Chloroethylvinyl Ether, mg/l	ND	ND	ND	ND	ND
Toluene, mg/l	ND	ND	ND	ND	ND
Chlorobenzene, mg/l	ND	ND	ND	ND	ND
Ethylbenzene, mg/l	0.0058	0.0089	ND	0.018	ND
Dichlorodifluoromethane, mg/l	ND	ND	ND	ND	ND
Methyl-Tert-Butyl-Ether (MTBE), mg/l	ND	ND	ND	ND	ND
1,2-Dibromomethane, mg/l	ND	ND	ND	ND	ND
o-Xylene, mg/l	ND	ND	ND	0.0087	ND
m&p-Xylene, mg/l	0.0054	ND	ND	0.020	ND
Fluorotrichloromethane, mg/l	ND	ND	ND	ND	ND
Arsenic, mg/l	ND	ND	ND	ND	ND
Arsenic (Dissolved), mg/l	ND	ND	ND	ND	ND
Chromium, mg/l	ND	0.010	ND	ND	ND
Chromium (Dissolved), mg/l	ND	ND	ND	ND	ND
Copper, mg/l	ND	ND	ND	ND	ND
Copper (Dissolved), mg/l	ND	ND	ND	ND	ND

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Spartanburg, SC 29304

Project: Wilmington, NC
Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE SAMPLED
46595-16	MW-12 (# 11500)	11-18-93
46595-17	MW-13 (# 11501)	11-18-93
46595-18	MW-17 (# 11502)	11-18-93
46595-19	MW-16 (# 11503)	11-18-93
46595-20	Trip Blank	11-18-93

PARAMETER	46595-16	46595-17	46595-18	46595-19	46595-20
Semivolatile Organics (8270)					
bis(2-Chloroethyl)ether, mg/l	ND	ND	ND	ND	ND
Naphthalene, mg/l	3.1	3.1	ND	ND	ND
Acenaphthene, mg/l	0.77	0.80	0.016	ND	ND
Phenanthrene, mg/l	0.74	0.77	0.017	ND	ND
Anthracene, mg/l	ND	ND	ND	ND	ND
Fluoranthene, mg/l	0.31	0.30	0.010	ND	ND
Chrysene, mg/l	ND	ND	ND	ND	ND
Benzo(a)Anthracene, mg/l	ND	ND	ND	ND	ND
Benzo(b)fluoranthene, mg/l	ND	ND	ND	ND	ND
Benzo(k)fluoranthene, mg/l	ND	ND	ND	ND	ND
Benzo(a)pyrene, mg/l	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene, mg/l	ND	ND	ND	ND	ND
Dibenz(a,h)anthracene, mg/l	ND	ND	ND	ND	ND
2-Chlorophenol, mg/l	ND	ND	ND	ND	ND
Phenol, mg/l	ND	ND	ND	ND	ND
2,4-Dimethylphenol, mg/l	ND	ND	ND	ND	ND
2,4,6-Trichlorophenol, mg/l	ND	ND	ND	ND	ND
4-Chloro-3-methylphenol, mg/l	ND	ND	ND	ND	ND
2,4-Dinitrophenol, mg/l	ND	ND	ND	ND	ND
Pentachlorophenol, mg/l	ND	ND	ND	ND	ND
2,4,5-Trichlorophenol, mg/l	ND	ND	ND	ND	ND
Tetrachlorophenols, mg/l	ND	ND	ND	ND	ND
Carbazole, mg/l	0.21	0.22	ND	ND	ND

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Southern Wood Piedmont (WI)
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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE SAMPLED
46595-16	MW-12 (# 11500)	11-18-93
46595-17	MW-13 (# 11501)	11-18-93
46595-18	MW-17 (# 11502)	11-18-93
46595-19	MW-16 (# 11503)	11-18-93
46595-20	Trip Blank	11-18-93

PARAMETER	46595-16	46595-17	46595-18	46595-19	46595-20
Volatiles by GC/MS					
Chloromethane, mg/l	ND	ND	ND	ND	ND
Bromomethane, mg/l	ND	ND	ND	ND	ND
Vinyl Chloride, mg/l	ND	ND	ND	ND	ND
Chloroethane, mg/l	ND	ND	ND	ND	ND
Methylene Chloride (Dichloromethane), mg/l	ND	ND	ND	ND	ND
1,1-Dichloroethene, mg/l	ND	ND	ND	ND	ND
1,1-Dichloroethane, mg/l	ND	ND	ND	ND	ND
Trans-1,2-Dichloroethylene, mg/l	ND	ND	ND	ND	ND
1,2-Dichloroethane, mg/l	ND	ND	ND	ND	ND
1,1,1-Trichloroethane, mg/l	ND	ND	ND	ND	ND
Carbon Tetrachloride, mg/l	ND	ND	ND	ND	ND
Bromodichloromethane, mg/l	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane, mg/l	ND	ND	ND	ND	ND
1,2-Dichloropropane, mg/l	ND	ND	ND	ND	ND
Trichloroethene, mg/l	ND	ND	ND	ND	ND
Dibromochloromethane, mg/l	ND	ND	ND	ND	ND
1,1,2-Trichloroethane, mg/l	ND	ND	ND	ND	ND
Benzene, mg/l	ND	0.046	ND	ND	ND

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ENVIRONMENTAL AFFAIRS

Ms. Sandra Watson
Southern Wood Piedmont (WI)
P.O. Box 5477, I-85 and Sigsbee Rd.
Spartanburg, SC 29304

Project: Wilmington, NC
Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE SAMPLED
46595-16	MW-12 (# 11500)	11-18-93
46595-17	MW-13 (# 11501)	11-18-93
46595-18	MW-17 (# 11502)	11-18-93
46595-19	MW-16 (# 11503)	11-18-93
46595-20	Trip Blank	11-18-93

PARAMETER	46595-16	46595-17	46595-18	46595-19	46595-20
Cis-1,3-Dichloropropene, mg/l	ND	ND	ND	ND	ND
2-Chloroethylvinyl Ether, mg/l	ND	ND	ND	ND	ND
Toluene, mg/l	0.0074	ND	ND	ND	ND
Chlorobenzene, mg/l	ND	ND	ND	ND	ND
Ethylbenzene, mg/l	ND	0.026	ND	ND	ND
Dichlorodifluoromethane, mg/l	ND	ND	ND	ND	ND
Methyl-Tert-Butyl-Ether (MTBE), mg/l	ND	ND	ND	ND	ND
1,2-Dibromomethane, mg/l	ND	ND	ND	ND	ND
o-Xylene, mg/l	0.0066	0.013	ND	ND	ND
m&p-Xylene, mg/l	0.011	0.014	ND	ND	ND
Fluorotrichloromethane, mg/l	ND	ND	ND	ND	ND
Arsenic, mg/l	0.029	0.049	0.023	ND	ND
Arsenic (Dissolved), mg/l	ND	ND	ND	ND	ND
Chromium, mg/l	0.024	0.040	0.012	ND	ND
Chromium (Dissolved), mg/l	ND	ND	ND	ND	ND
Copper, mg/l	0.043	0.058	0.025	ND	ND
Copper (Dissolved), mg/l	ND	ND	ND	ND	ND

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Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE SAMPLED
46595-21	Field Blank	11-18-93

PARAMETER	46595-21
Semivolatile Organics (8270)	
bis(2-Chloroethyl)ether, mg/l	ND
Naphthalene, mg/l	ND
Acenaphthene, mg/l	ND
Phenanthrene, mg/l	ND
Anthracene, mg/l	ND
Fluoranthene, mg/l	ND
Chrysene, mg/l	ND
Benzo(a)Anthracene, mg/l	ND
Benzo(b)fluoranthene, mg/l	ND
Benzo(k)fluoranthene, mg/l	ND
Benzo(a)pyrene, mg/l	ND
Indeno(1,2,3-cd)pyrene, mg/l	ND
Dibenz(a,h)anthracene, mg/l	ND
2-Chlorophenol, mg/l	ND
Phenol, mg/l	ND
2,4-Dimethylphenol, mg/l	ND
2,4,6-Trichlorophenol, mg/l	ND
4-Chloro-3-methylphenol, mg/l	ND
2,4-Dinitrophenol, mg/l	ND
Pentachlorophenol, mg/l	ND
2,4,5-Trichlorophenol, mg/l	ND
Tetrachlorophenols, mg/l	ND
Carbazole, mg/l	ND

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE SAMPLED
46595-21	Field Blank	11-18-93

PARAMETER	46595-21
Volatiles by GC/MS	
Chloromethane, mg/l	ND
Bromomethane, mg/l	ND
Vinyl Chloride, mg/l	ND
Chloroethane, mg/l	ND
Methylene Chloride (Dichloromethane), mg/l	ND
1,1-Dichloroethene, mg/l	ND
1,1-Dichloroethane, mg/l	ND
Trans-1,2-Dichloroethylene, mg/l	ND
1,2-Dichloroethane, mg/l	ND
1,1,1-Trichloroethane, mg/l	ND
Carbon Tetrachloride, mg/l	ND
Bromodichloromethane, mg/l	ND
1,1,2,2-Tetrachloroethane, mg/l	ND
1,2-Dichloropropane, mg/l	ND
Trichloroethene, mg/l	ND
Dibromochloromethane, mg/l	ND
1,1,2-Trichloroethane, mg/l	ND
Benzene, mg/l	ND
Cis-1,3-Dichloropropene, mg/l	ND
2-Chloroethylvinyl Ether, mg/l	ND
Toluene, mg/l	ND
Chlorobenzene, mg/l	ND
Ethylbenzene, mg/l	ND

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE SAMPLED
46595-21	Field Blank	11-18-93

PARAMETER	46595-21
Dichlorodifluoromethane, mg/l	ND
Methyl-Tert-Butyl-Ether (MTBE), mg/l	ND
1,2-Dibromomethane, mg/l	ND
o-Xylene, mg/l	ND
m&p-Xylene, mg/l	ND
Fluorotrichloromethane, mg/l	ND
Arsenic, mg/l	ND
Arsenic (Dissolved), mg/l	ND
Chromium, mg/l	ND
Chromium (Dissolved), mg/l	ND
Copper, mg/l	ND
Copper (Dissolved), mg/l	ND

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE SAMPLED
46595-22	MW-27 (# 11494)	11-18-93

PARAMETER	46595-22
Semivolatile Organics (8270)	
bis(2-Chloroethyl)ether, mg/l	ND
Naphthalene, mg/l	ND
Acenaphthene, mg/l	ND
Phenanthrene, mg/l	ND
Anthracene, mg/l	ND
Fluoranthene, mg/l	ND
Chrysene, mg/l	ND
Benzo(a)Anthracene, mg/l	ND
Benzo(b)fluoranthene, mg/l	ND
Benzo(k)fluoranthene, mg/l	ND
Benzo(a)pyrene, mg/l	ND
Indeno(1,2,3-cd)pyrene, mg/l	ND
Dibenz(a,h)anthracene, mg/l	ND
2-Chlorophenol, mg/l	ND
Phenol, mg/l	ND
2,4-Dimethylphenol, mg/l	ND
2,4,6-Trichlorophenol, mg/l	ND
4-Chloro-3-methylphenol, mg/l	ND
2,4-Dinitrophenol, mg/l	ND
Pentachlorophenol, mg/l	ND
2,4,5-Trichlorophenol, mg/l	ND
Tetrachlorophenols, mg/l	ND
Carbazole, mg/l	ND

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE SAMPLED
46595-22	MW-27 (# 11494)	11-18-93

PARAMETER	46595-22
Volatiles by GC/MS	
Chloromethane, mg/l	ND
Bromomethane, mg/l	ND
Vinyl Chloride, mg/l	ND
Chloroethane, mg/l	ND
Methylene Chloride (Dichloromethane), mg/l	ND
1,1-Dichloroethene, mg/l	ND
1,1-Dichloroethane, mg/l	ND
Trans-1,2-Dichloroethylene, mg/l	ND
1,2-Dichloroethane, mg/l	ND
1,1,1-Trichloroethane, mg/l	ND
Carbon Tetrachloride, mg/l	ND
Bromodichloromethane, mg/l	ND
1,1,2,2-Tetrachloroethane, mg/l	ND
1,2-Dichloropropane, mg/l	ND
Trichloroethene, mg/l	ND
Dibromochloromethane, mg/l	ND
1,1,2-Trichloroethane, mg/l	ND
Benzene, mg/l	ND
Cis-1,3-Dichloropropene, mg/l	ND
2-Chloroethylvinyl Ether, mg/l	ND
Toluene, mg/l	ND
Chlorobenzene, mg/l	ND
Ethylbenzene, mg/l	ND

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE SAMPLED
46595-22	MW-27 (# 11494)	11-18-93

PARAMETER	46595-22
Dichlorodifluoromethane, mg/l	ND
Methyl-Tert-Butyl-Ether (MTBE), mg/l	ND
1,2-Dibromomethane, mg/l	ND
o-Xylene, mg/l	ND
m&p-Xylene, mg/l	ND
Fluorotrichloromethane, mg/l	ND
Arsenic, mg/l	0.014
Arsenic (Dissolved), mg/l	ND
Chromium, mg/l	ND
Chromium (Dissolved), mg/l	ND
Copper, mg/l	ND
Copper (Dissolved), mg/l	ND
Hydrocarbons (Modified 8015)	
Hydrocarbons as Gasoline, mg/l	ND
Hydrocarbons (Modified 8015 - Ext.)	
Hydrocarbons as Kerosene, mg/l	ND
Hydrocarbons as Heavy Oils, mg/l	ND
Hydrocarbons as Mineral Spirits, mg/l	ND
Hydrocarbons as Varsol, mg/l	ND
Hydrocarbons as Fuel Oil/Diesel, mg/l	ND

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES
46595-23	Detection Limits
46595-24	Accuracy (mean % recovery)
46595-25	Precision (% RPD)
46595-26	Analyst Initials
46595-27	EPA Method Numbers

PARAMETER	46595-23	46595-24	46595-25	46595-26	46595-27
Semivolatile Organics (8270)					
Bis(2-chloroisopropyl)ether, mg/l	0.010	---	---	RB	8270
Naphthalene, mg/l	0.010	---	---	RB	8270
Acenaphthene, mg/l	0.010	88 %	8.0 %	RB	8270
Phenanthrene, mg/l	0.010	---	---	RB	8270
Anthracene, mg/l	0.010	---	---	RB	8270
Fluoranthene, mg/l	0.010	---	---	RB	8270
Chrysene, mg/l	0.010	---	---	RB	8270
Benzo(a)Anthracene, mg/l	0.010	---	---	RB	8270
Benzo(b)fluoranthene, mg/l	0.010	---	---	RB	8270
Benzo(k)fluoranthene, mg/l	0.010	---	---	RB	8270
Benzo(a)pyrene, mg/l	0.010	---	---	RB	8270
Indeno(1,2,3-cd)pyrene, mg/l	0.010	---	---	RB	8270
Dibenz(a,h)anthracene, mg/l	0.010	---	---	RB	8270
2-Chlorophenol, mg/l	0.010	98 %	7.1 %	RB	8270
Phenol, mg/l	0.010	82 %	6.1 %	RB	8270
2,4-Dimethylphenol, mg/l	0.010	---	---	RB	8270
2,4,6-Trichlorophenol, mg/l	0.010	---	---	RB	8270
4-Chloro-3-methylphenol, mg/l	0.010	88 %	5.7 %	RB	8270
2,4-Dinitrophenol, mg/l	0.050	---	---	RB	8270
Pentachlorophenol, mg/l	0.050	64 %	1.5 %	RB	8270
2,4,5-Trichlorophenol, mg/l	0.010	---	---	RB	8270
Tetrachlorophenols, mg/l	0.050	---	---	RB	8270
Carbazole, mg/l	0.010	---	---	RB	8270

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Spartanburg, SC 29304

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES
46595-23	Detection Limits
46595-24	Accuracy (mean % recovery)
46595-25	Precision (% RPD)
46595-26	Analyst Initials
46595-27	EPA Method Numbers

PARAMETER	46595-23	46595-24	46595-25	46595-26	46595-27
Volatiles by GC/MS					
Chloromethane, mg/l	0.010	---	---	TCS	8240
Bromomethane, mg/l	0.010	---	---	TCS	8240
Vinyl Chloride, mg/l	0.010	---	---	TCS	8240
Chloroethane, mg/l	0.010	---	---	TCS	8240
Methylene Chloride (Dichloromethane), mg/l	0.0050	---	---	TCS	8240
1,1-Dichloroethene, mg/l	0.0050	133 %	3.0 %	TCS	8240
1,1-Dichloroethane, mg/l	0.0050	---	---	TCS	8240
Trans-1,2-Dichloroethylene, mg/l	0.0050	---	---	TCS	8240
1,2-Dichloroethane, mg/l	0.0050	---	---	TCS	8240
1,1,1-Trichloroethane, mg/l	0.0050	---	---	TCS	8240
Carbon Tetrachloride, mg/l	0.0050	---	---	TCS	8240
Bromodichloromethane, mg/l	0.0050	---	---	TCS	8240
1,1,2,2-Tetrachloroethane, mg/l	0.0050	---	---	TCS	8240
1,2-Dichloropropane, mg/l	0.0050	---	---	TCS	8240
Trichloroethene, mg/l	0.0050	129 %	1.6 %	TCS	8240
Dibromochloromethane, mg/l	0.0050	---	---	TCS	8240
1,1,2-Trichloroethane, mg/l	0.0050	---	---	TCS	8240
Benzene, mg/l	0.0050	131 %	1.5 %	TCS	8240

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LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES
46595-23	Detection Limits
46595-24	Accuracy (mean % recovery)
46595-25	Precision (% RPD)
46595-26	Analyst Initials
46595-27	EPA Method Numbers

PARAMETER	46595-23	46595-24	46595-25	46595-26	46595-27
Cis-1,3-Dichloropropene, mg/l	0.0050	---	---	TCS	8240
2-Chloroethylvinyl Ether, mg/l	0.0050	---	---	TCS	8240
Toluene, mg/l	0.0050	130 %	0.77 %	TCS	8240
Chlorobenzene, mg/l	0.0050	132 %	0.76 %	TCS	8240
Ethylbenzene, mg/l	0.0050	---	---	TCS	8240
Dichlorodifluoromethane, mg/l	0.0050	---	---	TCS	8240
Methyl-Tert-Butyl-Ether (MTBE), mg/l	0.050	---	---	TCS	8240
1,2-Dibromomethane, mg/l	0.0050	---	---	TCS	8240
o-Xylene, mg/l	0.0050	---	---	TCS	8240
m&p-Xylene, mg/l	0.0050	---	---	TCS	8240
Fluorotrichloromethane, mg/l	0.0050	---	---	TCS	8240
Arsenic, mg/l	0.010	107 %	2.6 %	JS	7060
Arsenic (Dissolved), mg/l	0.010	91 %	2.6 %	JS	7060
Chromium, mg/l	0.010	93 %	0.34 %	AL	6010
Chromium (Dissolved), mg/l	0.010	93 %	0.34 %	AL	6010
Copper, mg/l	0.025	93 %	0.17 %	AL	6010
Copper (Dissolved), mg/l	0.025	93 %	0.17 %	AL	6010
Hydrocarbons (Modified 8015)					
Hydrocarbons as Gasoline, mg/l	0.050	94 %	2.1 %	SLG	8015

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES
46595-23	Detection Limits
46595-24	Accuracy (mean % recovery)
46595-25	Precision (% RPD)
46595-26	Analyst Initials
46595-27	EPA Method Numbers

PARAMETER	46595-23	46595-24	46595-25	46595-26	46595-27
Hydrocarbons (Modified 8015 - Ext.)					
Hydrocarbons as Kerosene, mg/l	0.30	---	---	LM	8015
Hydrocarbons as Heavy Oils, mg/l	1.0	---	---	LM	8015
Hydrocarbons as Mineral Spirits, mg/l	0.30	---	---	LM	8015
Hydrocarbons as Varsol, mg/l	0.30	---	---	LM	8015
Hydrocarbons as Fuel Oil/Diesel, mg/l	0.30	78 %	15 %	LM	8015

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES
46595-28	Date Extracted
46595-29	Date Analyzed

PARAMETER	46595-28	46595-29
Semivolatile Organics (8270)		
Bis(2-chloroisopropyl)ether	11.24.93	12.1/9.93
Naphthalene	11.24.93	12.1/9.93
Acenaphthene	11.24.93	12.1/9.93
Phenanthrene	11.24.93	12.1/9.93
Anthracene	11.24.93	12.1/9.93
Fluoranthene	11.24.93	12.1/9.93
Chrysene	11.24.93	12.1/9.93
Benzo(a)Anthracene	11.24.93	12.1/9.93
Benzo(b)fluoranthene	11.24.93	12.1/9.93
Benzo(k)fluoranthene	11.24.93	12.1/9.93
Benzo(a)pyrene	11.24.93	12.1/9.93
Indeno(1,2,3-cd)pyrene	11.24.93	12.1/9.93
Dibenz(a,h)anthracene	11.24.93	12.1/9.93
2-Chlorophenol	11.24.93	12.1/9.93
Phenol	11.24.93	12.1/9.93
2,4-Dimethylphenol	11.24.93	12.1/9.93
2,4,6-Trichlorophenol	11.24.93	12.1/9.93
4-Chloro-3-methylphenol	11.24.93	12.1/9.93
2,4-Dinitrophenol	11.24.93	12.1/9.93
Pentachlorophenol	11.24.93	12.1/9.93
2,4,5-Trichlorophenol	11.24.93	12.1/9.93
Tetrachlorophenols	11.24.93	12.1/9.93
Carbazole	11.24.93	12.1/9.93

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REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES
46595-28	Date Extracted
46595-29	Date Analyzed

PARAMETER	46595-28	46595-29
Volatiles by GC/MS		
Chloromethane	---	12.01.93
Bromomethane	---	12.01.93
Vinyl Chloride	---	12.01.93
Chloroethane	---	12.01.93
Methylene Chloride (Dichloromethane)	---	12.01.93
1,1-Dichloroethene	---	12.01.93
1,1-Dichloroethane	---	12.01.93
Trans-1,2-Dichloroethylene	---	12.01.93
1,2-Dichloroethane	---	12.01.93
1,1,1-Trichloroethane	---	12.01.93
Carbon Tetrachloride	---	12.01.93
Bromodichloromethane	---	12.01.93
1,1,2,2-Tetrachloroethane	---	12.01.93
1,2-Dichloropropane	---	12.01.93
Trichloroethene	---	12.01.93
Dibromochloromethane	---	12.01.93
1,1,2-Trichloroethane	---	12.01.93
Benzene	---	12.01.93
Cis-1,3-Dichloropropene	---	12.01.93
2-Chloroethylvinyl Ether	---	12.01.93
Toluene	---	12.01.93
Chlorobenzene	---	12.01.93

SL SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

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LOG NO: S3-46595

RECEIVED JAN 03 1994 ENVIRON...

Received: 19 NOV 93

Ms. Sandra Watson
Southern Wood Piedmont (WI)
P.O. Box 5477, I-85 and Sigsbee Rd.
Spartanburg, SC 29304

Project: Wilmington, NC
Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES
46595-28	Date Extracted
46595-29	Date Analyzed

PARAMETER	46595-28	46595-29
Ethylbenzene	---	12.01.93
Dichlorodifluoromethane	---	12.01.93
Methyl-Tert-Butyl-Ether (MTBE)	---	12.01.93
1,2-Dibromomethane	---	12.01.93
o-Xylene	---	12.01.93
m&p-Xylene	---	12.01.93
Fluorotrichloromethane	---	12.01.93
Arsenic	---	12.10.93
Arsenic (Dissolved)	---	12.08.93
Chromium	---	12.09.93
Chromium (Dissolved)	---	12.09.93
Copper	---	12.09.93
Copper (Dissolved)	---	12.09.93
Hydrocarbons (Modified 8015)		
Hydrocarbons as Gasoline	---	11.26.93
Hydrocarbons (Modified 8015 - Ext.)		
Hydrocarbons as Kerosene	11.23.93	12.05.93
Hydrocarbons as Heavy Oils	11.23.93	12.05.93
Hydrocarbons as Mineral Spirits	11.23.93	12.05.93
Hydrocarbons as Varsol	11.23.93	12.05.93
Hydrocarbons as Fuel Oil/Diesel	11.23.93	12.05.93

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& ENVIRONMENTAL SERVICES, INC.

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RECEIVED
JAN 0 3 1994
ENVIRONMENTAL

LOG NO: S3-46595
Received: 19 NOV 93

Ms. Sandra Watson
Southern Wood Piedmont (WI)
P.O. Box 5477, I-85 and Sigsbee Rd.
Spartanburg, SC 29304

Project: Wilmington, NC
Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES
46595-30	Report Completion Date

PARAMETER	46595-30
Date Reported	12.22.93

Methods: EPA SW-846
ND = Not Detected

J. W. Andrews, Ph. D.

Final Page Of Report

SL SAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC.

05183

☒ 5102 LaRoche Avenue, Savannah, GA 31404 — Phone: (912) 354-7858 — Fax (912) 352-0165
☐ 2846 Industrial Plaza Drive, Tallahassee, FL 32301 — Phone: (904) 878-3994 — Fax (904) 878-9504
☐ 414 Southwest 12th Avenue, Deerfield Beach, FL 33442 — Phone: (305) 421-7400 — Fax (305) 421-2584
☐ 900 Lakeside Drive, Mobile, AL 36693 — Phone: (205) 666-6633 — Fax (205) 666-6696
☐ 6712 Benjamin Road, Suite 100, Tampa, FL 33634 — Phone: (813) 885-7427 — Fax (813) 885-7049

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

Wilmington Site Specific

P.O. NUMBER	PROJECT NUMBER	PROJECT NAME	PAGE	OF
	12-53015.00	SWP-W.1	1	2

CLIENT NAME: ViroGroup, Inc
TELEPHONE/FAX NO.: 803-957-6270 / 803-957-3845
CLIENT ADDRESS: 1445 Pisgah Church Rd.
CITY, STATE, ZIP CODE: Lexington, SC 29072
SAMPLER(S) NAME(S): Greg Kurtz, James Leaphart
CLIENT PROJECT MANAGER: Greg Kurtz

☒ STANDARD TAT
☐ EXPEDITED TAT *
REPORT DUE DATE _____
* SUBJECT TO RUSH FEES

MATRIX TYPE: AQUEOUS MATRIX / NONAQUEOUS MATRIX / OIL MATRIX / AIR MATRIX

REQUIRED ANALYSES — NUMBER OF CONTAINERS SUBMITTED

SAMPLING DATE	SAMPLING TIME	SAMPLE IDENTIFICATION	AQUEOUS MATRIX	NONAQUEOUS MATRIX	OIL MATRIX	AIR MATRIX	SV	VOC	Total Metals Cr Cu AS	Dissolved Metals Cr Cu AS	TPH-Diesel	TPH-Gas + MTBE					
11-18-93	7:20	MW-29 SWP Log# 11484	X				2	3	1	1	~~2~~	~~3~~					
	7:40	MW-29A 11485															
	8:00	MW-30 11486															
	8:15	MW-25 11487															
	8:30	MW-20 11488															
	8:45	MW-11B 11489															
	9:10	MW-19A 11490															
	1:50	MW-28A 11491															
	2:05	MW-22A 11492															
	2:20	MW-15 11493															
	2:35	MW-27 11494									2	3					
	2:50	MW-19 11495															

RECEIVED JAN 03 1994 ENVIRO

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
[signature]	11/11	12:00	[signature]	11.18	1618			
RECEIVED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
Gregory B. Kurtz	11/16/93	7:30	Gregory B. Kurtz	11/18/93	1618			

FOR SAVANNAH LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	S.L. LOG NO.	LABORATORY REMARKS
[signature]	11-19-93	10:13	☑ YES ☐ NO		46595	

SL SAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC. 05182

☒ 5102 LaRoche Avenue, Savannah, GA 31404 — Phone: (912) 354-7858 — Fax (912) 352-0165
☐ 2846 Industrial Plaza Drive, Tallahassee, FL 32301 — Phone: (904) 878-3994 — Fax (904) 878-9504
☐ 414 Southwest 12th Avenue, Deerfield Beach, FL 33442 — Phone: (305) 421-7400 — Fax (305) 421-2584
☐ 900 Lakeside Drive, Mobile, AL 36693 — Phone: (205) 666-6633 — Fax (205) 666-6696
☐ 6712 Benjamin Road, Suite 100, Tampa, FL 33634 — Phone: (813) 885-7427 — Fax (813) 885-7049

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

P.O. NUMBER	PROJECT NUMBER	PROJECT NAME
	12-53015.00	SWP-Wil

Wilmington Site Specific

PAGE 2 OF 2

CLIENT NAME	TELEPHONE/FAX NO.
ViroGroup, Inc.	803-957-6270 / 803-957-3845

CLIENT ADDRESS	CITY, STATE, ZIP CODE
1415 Pisgah Church Rd.	Lexington, SC 29072

SAMPLER(S) NAME(S)	CLIENT PROJECT MANAGER
Greg Kuntz, James Leaghart	Greg Kuntz

☒ STANDARD TAT
☐ EXPEDITED TAT *

REPORT DUE DATE: _____

* SUBJECT TO RUSH FEES

SAMPLING DATE	SAMPLING TIME	SAMPLE IDENTIFICATION	MATRIX TYPE: AQUEOUS MATRIX	NONAQUEOUS MATRIX	OIL MATRIX	AIR MATRIX	REQUIRED ANALYSES: SV	VOC	Total Metal Cr Cu Ag	Dissolved Metals Cr Cu Ag	NUMBER OF CONTAINERS SUBMITTED
11-18-93	3:05	MW-24 SWP Log# 11496	X				2	3	1	1	
	3:15	MW-11A 11497									
	3:25	MW-14A 11498									
	3:40	MW-28 11499									
	3:50	MW-12 ~~11~~ 11500									
	4:00	MW-13 11501									
	4:10	MW-17 11502									
	4:20	MW-16 11503									
	5:00	Field Blank									
		Trip Blank									

RECEIVED JAN 03 1994 ENVIRONMENTAL

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
[signature]	11/17	12:00	[signature]	11/18	1618			
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RELINQUISHED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
Gregory B. Kuntz	11/16/93	7:30	Gregory B. Kuntz	11/17/93	1618			

FOR SAVANNAH LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	S.L. LOG NO.	LABORATORY REMARKS
[signature]	11-19-93	10:13	☑ YES ☐ NO		46595	

Phase III Surface Water Sample Parameter Summary Table - Semi-Volatiles and Metals

PHASE III SURFACE WATER SAMPLE PARAMETER SUMMARY TABLE
SEMI–VOLATILES AND METALS
SOUTHERN WOOD PIEDMONT FACILITY
WILMINGTON, NORTH CAROLINA

	U.S. HIGHWAY #74 BRIDGE		OLD SLIP		GREENFIELD CREEK		STATE PORTS AUTHORITY	
	1/94		1/94		1/94		1/94	
SEMI–VOLATILES	RESULT	DL*	RESULT	DL*	RESULT	DL*	RESULT	DL*
Acenaphthene	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Acenaphthylene	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Anthracene	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Benzo(a)Anthracene	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Benzo(a)Pyrene	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Benzo(b,k)Fluoranthene	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Carbazole	ND	0.010	ND	0.010	ND	0.010	ND	0.010
2–Chlorophenol	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Chrysene	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Dibenzo(a,h)Anthracene	ND	0.010	ND	0.010	ND	0.010	ND	0.010
2,4–Dimethylphenol	ND	0.010	ND	0.010	ND	0.010	ND	0.010
2,4–Dinitrophenol	ND	0.050	ND	0.050	ND	0.050	ND	0.050
Fluoranthene	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Indeno(1,2–cd)pyrene	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Naphthalene	ND	0.010	ND	0.010	ND	0.010	ND	0.010
p–chloro–m–cresol	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Pentachlorophenol	ND	0.050	ND	0.050	ND	0.050	ND	0.050
Phenanthrene	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Phenol	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Tetrachlorophenols	ND	0.050	ND	0.050	ND	0.050	ND	0.050
Trichlorophenols	ND	0.010	ND	0.010	ND	0.010	ND	0.010
METALS								
Arsenic	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Chromium	ND	0.010	ND	0.010	ND	0.010	ND	0.010
Copper	ND	0.025	ND	0.025	ND	0.025	ND	0.025

NOTE: DL = Detection Limit
ND = Below Laboratory Detection Limit
All units in mg/l

Phase III Surface Water Sample Laboratory Analytical Data and QA/QC

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RECEIVED
FEB 28 1994
ENVIRONMENTAL AFFAIRS

LOG NO: S4-40324

Received: 20 JAN 94

Ms. Sandra Watson
Southern Wood Piedmont (WI)
P.O. Box 5477, I-85 and Sigsbee Rd.
Spartanburg, SC 29304

CC: Greg Kuntz-ETE

Project: Wilmington, NC
Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE SAMPLED
40324-1	States Port Authority C/F River Sample # 60 (# 11743)	01-18-94
40324-2	Greenfield Creek # 61 (# 11744)	01-18-94
40324-3	SWP Old Slip # 62 (# 11745)	01-18-94
40324-4	US #74 New Bridge #63 (# 11746)	01-18-94

PARAMETER	40324-1	40324-2	40324-3	40324-4
K001 (Method 8270)				
2-Chlorophenol, mg/l	ND	ND	ND	ND
Phenol, mg/l	ND	ND	ND	ND
2,4-Dimethylphenol, mg/l	ND	ND	ND	ND
Trichlorophenols, mg/l	ND	ND	ND	ND
p-Chloro-m-cresol, mg/l	ND	ND	ND	ND
Tetrachlorophenols, mg/l	ND	ND	ND	ND
2,4-Dinitrophenol, mg/l	ND	ND	ND	ND
Pentachlorophenol, mg/l	ND	ND	ND	ND
Naphthalene, mg/l	ND	ND	ND	ND
Acenaphthene, mg/l	ND	ND	ND	ND
Acenaphthylene, mg/l	ND	ND	ND	ND
Phenanthrene, mg/l	ND	ND	ND	ND
Anthracene, mg/l	ND	ND	ND	ND
Fluoranthene, mg/l	ND	ND	ND	ND
Chrysene, mg/l	ND	ND	ND	ND
Benzo(a)Anthracene, mg/l	ND	ND	ND	ND
Benzo(b,k)fluoranthene, mg/l	ND	ND	ND	ND
Benzo(a)pyrene, mg/l	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene, mg/l	ND	ND	ND	ND
Dibenzo(a,h)anthracene, mg/l	ND	ND	ND	ND
Carbazole, mg/l	ND	ND	ND	ND
Dilution factor	1	1	1	1

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RECEIVED
FEB 28 1994
ENVIRONMENTAL

LOG NO: S4-40324

Received: 20 JAN 94

Ms. Sandra Watson
Southern Wood Piedmont (WI)
P.O. Box 5477, I-85 and Sigsbee Rd.
Spartanburg, SC 29304

CC: Greg Kuntz-ETE

Project: Wilmington, NC
Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , LIQUID SAMPLES	DATE SAMPLED
40324-1	States Port Authority C/F River Sample # 60 (# 11743)	01-18-94
40324-2	Greenfield Creek # 61 (# 11744)	01-18-94
40324-3	SWP Old Slip # 62 (# 11745)	01-18-94
40324-4	US #74 New Bridge #63 (# 11746)	01-18-94

PARAMETER	40324-1	40324-2	40324-3	40324-4
Arsenic (7060), mg/l	ND	ND	ND	ND
Chromium (6010), mg/l	ND	ND	ND	ND
Copper (6010), mg/l	ND	ND	ND	ND

SL SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

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RECEIVED
FEB 28 '94

LOG NO: S4-40324

Received: 20 JAN 94

Ms. Sandra Watson
Southern Wood Piedmont (WI)
P.O. Box 5477, I-85 and Sigsbee Rd.
Spartanburg, SC 29304

CC: Greg Kuntz-ETE

Project: Wilmington, NC
Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES
40324-5	Detection Limits
40324-6	Accuracy (mean % recovery)
40324-7	Precision (% RPD)
40324-8	Analyst Initials
40324-9	EPA Method Numbers

PARAMETER	40324-5	40324-6	40324-7	40324-8	40324-9
KO01 (Method 8270)					
2-Chlorophenol, mg/l	0.010	108 %	4.6 %	ML	8270
Phenol, mg/l	0.010	110 %	0 %	ML	8270
2,4-Dimethylphenol, mg/l	0.010	120 %	0.83 %	ML	8270
Trichlorophenols, mg/l	0.010	72 %	4.2 %	ML	8270
p-Chloro-m-cresol, mg/l	0.010	116 %	0 %	ML	8270
Tetrachlorophenols, mg/l	0.050	73 %	5.5 %	ML	8270
2,4-Dinitrophenol, mg/l	0.050	102 %	2.9 %	ML	8270
Pentachlorophenol, mg/l	0.050	66 %	29 %	ML	8270
Naphthalene, mg/l	0.010	90 %	2.2 %	ML	8270
Acenaphthene, mg/l	0.010	77 %	7.8 %	ML	8270
Acenaphthylene, mg/l	0.010	88 %	3.4 %	ML	8270
Phenanthrene, mg/l	0.010	86 %	4.6 %	ML	8270
Anthracene, mg/l	0.010	94 %	5.3 %	ML	8270
Fluoranthene, mg/l	0.010	88 %	1.1 %	ML	8270
Chrysene, mg/l	0.010	94 %	3.2 %	ML	8270
Benzo(a)Anthracene, mg/l	0.010	106 %	2.8 %	ML	8270
Benzo(b,k)fluoranthene, mg/l	0.010	99 %	11 %	ML	8270
Benzo(a)pyrene, mg/l	0.010	98 %	10 %	ML	8270
Indeno(1,2,3-cd)pyrene, mg/l	0.010	106 %	4.7 %	ML	8270
Dibenzo(a,h)anthracene, mg/l	0.010	110 %	0.91 %	ML	8270
Carbazole, mg/l	0.010	60 %	12 %	ML	8270

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RECEIVED
FEB 28 1994
ENVIRONMENTAL AFFAIRS

LOG NO: S4-40324

Received: 20 JAN 94

Ms. Sandra Watson
Southern Wood Piedmont (WI)
P.O. Box 5477, I-85 and Sigsbee Rd.
Spartanburg, SC 29304

CC: Greg Kuntz-ETE

Project: Wilmington, NC
Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES
40324-5	Detection Limits
40324-6	Accuracy (mean % recovery)
40324-7	Precision (% RPD)
40324-8	Analyst Initials
40324-9	EPA Method Numbers

PARAMETER	40324-5	40324-6	40324-7	40324-8	40324-9
Arsenic (7060), mg/l	0.010	99 %	6.1 %	PG	7060
Chromium (6010), mg/l	0.010	100 %	3.0 %	JM	6010
Copper (6010), mg/l	0.025	100 %	3.0 %	JM	6010

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RECEIVED
FEB 28 1994
ENVIRONMENTAL [illegible]

LOG NO: S4-40324

Received: 20 JAN 94

Ms. Sandra Watson
Southern Wood Piedmont (WI)
P.O. Box 5477, I-85 and Sigsbee
Spartanburg, SC 29304

CC: Greg Kuntz-ETE

Project: Wilmington, NC
Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES
40324-10	Dates Extracted
40324-11	Dates Analyzed

PARAMETER	40324-10	40324-11
K001 (Method 8270)		
2-Chlorophenol	01.24.94	02.17.94
Phenol	01.24.94	02.17.94
2,4-Dimethylphenol	01.24.94	02.17.94
Trichlorophenols	01.24.94	02.17.94
p-Chloro-m-cresol	01.24.94	02.17.94
Tetrachlorophenols	01.24.94	02.17.94
2,4-Dinitrophenol	01.24.94	02.17.94
Pentachlorophenol	01.24.94	02.17.94
Naphthalene	01.24.94	02.17.94
Acenaphthene	01.24.94	02.17.94
Acenaphthylene	01.24.94	02.17.94
Phenanthrene	01.24.94	02.17.94
Anthracene	01.24.94	02.17.94
Fluoranthene	01.24.94	02.17.94
Chrysene	01.24.94	02.17.94
Benzo(a)Anthracene	01.24.94	02.17.94
Benzo(b,k)fluoranthene	01.24.94	02.17.94
Benzo(a)pyrene	01.24.94	02.17.94
Indeno(1,2,3-cd)pyrene	01.24.94	02.17.94
Dibenzo(a,h)anthracene	01.24.94	02.17.94
Carbazole	01.24.94	02.17.94
Arsenic (7060)	---	01.21.94
Chromium (6010)	---	01.24.94
Copper (6010)	---	01.24.94

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& ENVIRONMENTAL SERVICES, INC.

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RECEIVED
FEB 28 1994
ENVIRONMENTAL AFFAIRS

LOG NO: S4-40324

Received: 20 JAN 94

Ms. Sandra Watson
Southern Wood Piedmont (WI)
P.O. Box 5477, I-85 and Sigsbee
Spartanburg, SC 29304

CC: Greg Kuntz-ETE

Project: Wilmington, NC
Sampled By: Client

REPORT OF RESULTS

LOG NO	SAMPLE DESCRIPTION , QC REPORT FOR LIQUID SAMPLES
40324-12	Report Completion Date

PARAMETER	40324-12
Date Reported	02.23.94

Methods: EPA SW-846
ND = Not Detected

J. W. Andrews

J. W. Andrews, Ph. D.

Final Page Of Report

SL SAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC.

[redacted] 5102 LaRoche Avenue, [redacted]ah, G[redacted] — Phon[redacted] 354-7[redacted] — [redacted] 354-[redacted]
2846 Industrial Plaza Drive, Tallahassee, FL 32301 — Phone: (904) 878-3994 — Fax (904) 878-9504
414 Southwest 12th Avenue, Deerfield Beach, FL 33442 — Phone: (305) 421-7400 — Fax (305) 421-2584
900 Lakeside Drive, Mobile, AL 36693 — Phone: (205) 666-6633 — Fax (205) 666-6696
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14754

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

O. NUMBER	PROJECT NUMBER	PROJECT NAME	MATRIX TYPE	REQUIRED ANALYSES	PAGE	OF
		1-910-791-2706 Southern Wood Piedmont				

CLIENT NAME	TELEPHONE/FAX NO.
Southern Wood Piedmont	1-910-791-2706
CLIENT ADDRESS	**CITY, STATE, ZIP CODE**
P.O. Box 450	Wilmington NC. 28402
SAMPLER(S) NAME(S)	**CLIENT PROJECT MANAGER**
H.O. Phillips	H.O. Phillips

☐ STANDARD TAT
☐ EXPEDITED TAT *
REPORT DUE DATE _____
* SUBJECT TO RUSH FEES

SAMPLING DATE	SAMPLING TIME	SAMPLE IDENTIFICATION	AQUEOUS MATRIX	NONAQUEOUS MATRIX	OIL MATRIX	AIR MATRIX	K-001	CCA									
			NUMBER OF CONTAINERS SUBMITTED														
1/18/94	9 00 Am	State Ports Authy c/Drive #23					2	1									
		Sample # 60															
		Log No 11743															
1/18/94	9 15 Am	Green Field Creek #61	3				2	1									
		Log No-11744															
		SWP. old Slip #62	3				2	1									
1/18/94	9 30 Am	Log No - 11745															
1/18/94	10 00 Am	US #74 New Bridge #63	3				2	1									
		Log No - 11746															
		All Samples Cape Fear River					1M/M Glass 25cmL Plastic										

RECEIVED FEB 28 1994 ENVIRONMENTAL AFFAIRS

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
S Samuel	1/6/94	9:00						
RECEIVED BY: (SIGNATURE)	**DATE**	**TIME**	**RELINQUISHED BY: (SIGNATURE)**	**DATE**	**TIME**	**RECEIVED BY: (SIGNATURE)**	**DATE**	**TIME**
[illegible]	1/17/94	8:00 Am	[illegible]	1/18/94	Am			

FOR SAVANNAH LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	S.L. LOG NO.	LABORATORY REMARKS
[illegible]	1/18/94	1:10	☑ YES ☐ NO		4032 4	

PHASE III SOIL SAMPLE PARAMETER SUMMARY TABLE
SOUTHERN WOOD PIEDMONT FACILITY
WILMINGTON, NORTH CAROLINA

SS-10A

SEMIVOLATILES	DL*	R*	VOLATILES	DL*	R*	METALS	DL*	R*
Bis(2-Chloroethyl)ether	0.33	ND	Chloromethane	0.01	ND	Arsenic	1.0	13.0
Naphthalene	0.33	ND	Bromomethane	0.01	ND	Chromium	1.0	38.0
Acenaphthene	0.33	3.3	Vinyl Chloride	0.01	ND	Copper	2.5	34.0
Phenanthrene	0.33	ND	Chloroethane	0.01	ND			
Anthracene	0.33	ND	Methylene Chloride	0.005	ND	% Solids		24.0
Fluoranthene	0.33	15.0	1,1-Dichloroethene	0.005	ND			
Chrysene	0.33	9.0	1,1-Dichloroethane	0.005	ND			
Benzo(a)Anthracene	0.33	7.3	Trans-1,2-Dichloroethylene	0.005	ND			
Benzo(b)fluoranthene	0.33	6.0	1,2-Dichloroethane	0.005	ND			
Benzo(k)fluoranthene	0.33	2.1	1,1,1-Trichloroethane	0.005	ND			
Benzo(a)pyrene	0.33	2.6	Carbon Tetrachloride	0.005	ND			
Indeno(1,2,3-cd)pyrene	0.33	ND	Bromodichloromethane	0.005	ND			
Dibenz(a,h)anthracene	0.33	ND	1,1,2,2-Tetrachloroethane	0.005	ND			
2-Chlorophenol	0.33	ND	1,2-Dichloropropane	0.005	ND			
Phenol	0.33	ND	Trichloroethene	0.005	ND			
2,4,-Dimethylphenol	0.33	ND	Dibromochloromethane	0.005	ND			
2,4,6-Trichlorophenol	0.33	ND	1,1,2-Trichloroethane	0.005	ND			
4-Chloro-3-methylphenol	0.33	ND	Benzene	0.005	ND			
2,4-Dinitrophenol	1.70	ND	Cis-1,3-Dichloropropene	0.005	ND			
Pentachlorophenol	1.70	ND	2-Chloroethylvinyl Ether	0.05	ND			
2,4,5-Trichlorophenol	1.70	ND	Toluene	0.005	ND			
Carbazole	0.33	ND	Chlorobenzene	0.005	ND			
Tetrachlorophenols	1.70	ND	Ethylbenzene	0.005	ND			
			o-Xylene	0.005	ND			
			m&p-Xylene	0.005	ND			
			1,2-Dibromoethane	0.005	ND			
			Methyl-Tert-Butyl-Ether	0.05	ND			
			Fluorotrichloromethane	0.005	ND			
			Dichlorodifluoromethane	0.005	ND			

NOTE: All units in mg/kg dw
DL = Laboratory Detection Limit
R = Laboratory Analytical Result