

**Fourth Five-Year Review Report  
Charles Macon Lagoon and Drum Storage Site  
Cordova, Richmond County, North Carolina  
US EPA ID: NCD 980840409**



Prepared for  
United States Environmental Protection Agency  
Region 4  
Atlanta, Georgia  
April 2015

Prepared by the  
State of North Carolina  
Department of Environment & Natural Resources

Approved by:

A handwritten signature in blue ink, appearing to read "Franklin E. Hill", is written over a horizontal line.

Franklin E. Hill, Director  
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US EPA Region 4

4/28/15  
Date



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## **LIST OF ACRONYMS**

AOC	Administrative Order on Consent
ARAR	Applicable or Relevant and Appropriate Requirement
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COC	Contaminant of Concern
CRQL	Contract Required Quantitation Limit
CWA	Clean Water Act
DCE	Dichloroethene
ESD	Explanation of Significant Difference
FS	Feasibility Study
FYR	Five-Year Review
IC	Institutional Control
MCL	Maximum Contaminant Level
MDSG	Macon Dockery Site Group
MW	Monitoring Well
NC 2L	North Carolina Classifications and Water Quality Standards, Subchapter 2L
NCAC	North Carolina Administrative Code
NC DENR	North Carolina Department of Environment and Natural Resources
NCP	National Contingency Plan
NCDWA	North Carolina Drinking Water Act
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
O&M	Operation and Maintenance
OU	Operable Unit

PAH	Polycyclic Aromatic Hydrocarbon
PCE	Tetrachloroethene
PCOR	Preliminary Close-Out Report
ppb	Parts per Billion
ppm	Parts per Million
PRP	Potentially Responsible Party
RAO	Remedial Action Objective
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RG	Remediation Goal
RI	Remedial Investigation
ROD	Record of Decision
RPM	Remedial Project Manager
SOW	Statement of Work
SR	State Road
SVE	Soil Vapor Extraction
TBC	To Be Considered
TCE	Trichloroethene
UAO	Unilateral Administrative Order
USC	United States Code
µg/L	Microgram per Liter or ppb
US EPA	United States Environmental Protection Agency
VOC	Volatile Organic Compound

## **EXECUTIVE SUMMARY**

The Charles Macon Lagoon and Drum Storage Site (the Site) operated as a waste oil recycling and antifreeze manufacturing facility from 1979 to 1982. The Site is located in Cordova, Richmond County, North Carolina. The Site is comprised of two non-contiguous, independently owned parcels of land: a tract owned by relatives and heirs of Charles Macon and a tract owned by relatives and heirs of John Dockery.

From 1979 to 1982, Mr. Charles Macon operated a waste oil reclamation and antifreeze manufacturing facility at the Macon property. Waste oils were collected in eleven unlined lagoons, nine above ground tanks, and two tankers on the Macon property and in one unlined lagoon on the Dockery property. During a 1980 Site Inspection, drums were discovered on both properties in various stages of deterioration.

The United States Environmental Protection Agency initiated a removal at the Macon property in November 1983. Drummed waste, reusable oil and calcium hydroxide flare charges were removed from the property. Oil and hydrocarbon sludges remaining in the lagoons were solidified, removed, and properly disposed off-site. The lagoons were then filled, graded, and seeded with grass. All lagoons were excavated and backfilled with the exception of Lagoon 10. Lagoon 10 received five truckloads of solidified sludge from Lagoon 7, boiler fly ash, crushed empty drums, and other miscellaneous debris. Lagoon 10 was then capped with a synthetic liner and a three-foot thick clay cover. Removal operations on the Dockery property began in January 1984. Hazardous materials in this portion of the property were stored in one unlined surface impoundment and in 55-gallon drums. Immediate removal activities at both properties were completed January 17, 1984.

The EPA completed an investigation at the Site between February and March 1985. Based on the results of this investigative effort, the Site was finalized on the National Priorities List (NPL) on July 22, 1987. In April 1988, the EPA entered into an Administrative Order on Consent (AOC) with the Potentially Responsible Parties (PRPs). The Remedial Investigation/Feasibility Study (RI/FS) was started in April 1988 and completed in September 1991. Sampling revealed volatile organic compounds (VOCs) and inorganic compounds in both the soil and groundwater.

The Record of Decision (ROD) for the Site was signed on September 30, 1991, and amended on June 1, 1994. The remedial actions for the Charles Macon Lagoon and Drum Storage Site are: soil vapor extraction (SVE) of soils in Lagoon 7; off-site disposal of Lagoon 10 contents (as stated in the ROD amendment); dismantling of the vessels (tanks, tankers, vats, etc.) and off-site disposal of vessel contents; and groundwater extraction, treatment (via air stripping and filtration), and discharge (to Solomon's Creek or an infiltration gallery). The 1991 ROD stated that contaminated soil in Lagoon 10 would be remediated through bioremediation. However, based on data gathered regarding the nature of the waste within Lagoon 10, the ROD was amended in June 1994 to provide for excavation and off-site disposal of Lagoon 10 waste materials. Remedial activities at Lagoon 10 began in June 1994 and were completed in November 1994. The SVE system installed in the area of Lagoon 7 was to remediate vadose zone soils beneath the former lagoon. The SVE system became fully operational in February 1996. Four separate systems to remediate the groundwater were constructed for the following areas: Macon Source Area; Upper/Lower Macon; Upper Dockery; and, Lower Dockery. All four of the

groundwater treatment systems became fully operational in February 1996. An Explanation of Significant Differences (ESD) was signed on December 17, 2009 to document a final decision to include institutional controls (ICs) in the form of groundwater use restrictions as part of the groundwater remedy for the Site.

This is the fourth Five-Year Review for the Charles Macon Lagoon and Drum Storage Site. The triggering action for this review is the signing date of the previous Five-Year Review report, May 11, 2010. The Five-Year Review for the Site is a policy review. A policy review is conducted when “upon completion of the remedial action, no hazardous substances, pollutants, or contaminants will remain on-site above levels that allow for unlimited use and unrestricted exposure, but requires more than five years to complete” (US EPA Comprehensive Five-Year Review Guidance, June 2001, Section 1.2.2). According to documents, the Site Inspection and interviews with the EPA, the exposure pathways to contaminated soil and groundwater have been mitigated. The remedies at the Charles Macon Lagoon and Drum Site are currently protective of human health and the environment in the short-term because soil contamination was remediated through source removal and soil vapor extraction, and groundwater contamination is being remediated by extraction, treatment, and discharge to infiltration galleries. Currently, no human exposure pathways exist to contaminated groundwater. However, in order for the remedies to be protective in the long-term, institutional controls are required to ensure long-term protectiveness.

## FIVE-YEAR REVIEW SUMMARY FORM

SITE IDENTIFICATION		
<b>Site Name:</b> Charles Macon Lagoon and Drum Storage Site		
<b>EPA ID:</b> NCD 980840409		
<b>Region:</b> 4	<b>State:</b> NC	<b>City/County:</b> Cordova, Richmond County
SITE STATUS		
<b>NPL Status:</b> Final		
<b>Multiple OUs?</b> No	<b>Has the site achieved construction completion?</b> 11 / 06 / 1996	
REVIEW STATUS		
<b>Lead agency:</b> US EPA <b>If "Other Federal Agency" was selected above, enter Agency name:</b>		
<b>Author name (Federal or State Project Manager):</b> David Mattison / Stephanie Grubbs		
<b>Author affiliation:</b> NC DENR		
<b>Review period:</b> 11 / 1 / 2014 – 5 / 11 / 2015		
<b>Date of site inspection:</b> 12 / 2 / 2014		
<b>Type of review:</b> Policy		
<b>Review number:</b> 4 (fourth)		
<b>Triggering action date:</b> 5 / 11 / 2010		
<b>Due date (five years after triggering action date):</b> 5 / 11 / 2015		



**Five-Year Review Summary Form (continued)**

**Issues/Recommendations**

**OU(s) without Issues/Recommendations Identified in the Five-Year Review:**

None

**Issues and Recommendations Identified in the Five-Year Review:**

<b>OU(s):</b> 01	<b>Issue Category:</b> Institutional Controls
	<b>Issue:</b> Institutional Controls have not been implemented.
	<b>Recommendation:</b> Implement permanent land use restrictions or other appropriate institutional controls at the Site.

Affect Current Protectiveness	Affect Future Protectiveness	Implementing Party	Oversight Party	Milestone Date
No	Yes	EPA/State	EPA	05/11/16

*Sitewide Protectiveness Statement*

*Protectiveness Determination:*  
Short-Term Protective

*Addendum Due Date:*  
Not Applicable

*Protectiveness Statement:*

The remedies at the Charles Macon Lagoon and Drum Site are currently protective of human health and the environment in the short-term because soil contamination was remediated through source removal and soil vapor extraction, and groundwater contamination is being remediated by extraction, treatment, and discharge to infiltration galleries. Currently, no human exposure pathways exist to contaminated groundwater. However, in order for the remedies to be protective in the long-term, institutional controls are required to ensure long-term protectiveness.

**Environmental Indicators**

- Current human exposures at the Site are under control.
- Current groundwater migration is under control.

**Are Necessary Institutional Controls in Place?**

All Some None

**Has EPA Designated the Site as Sitewide Ready for Anticipated Use?**

Yes No

**Has the Site Been Put into Reuse?**

Yes No

## 1.0 Introduction

The purpose of conducting a Five-Year Review (FYR) is to determine whether the remedy implemented at a Site is protective of human health and the environment. The methods, findings, and conclusions of this review are documented in the FYR report. In addition, FYR reports identify issues found during the review, if any, and identify recommendations to address them.

The EPA prepares FYRs pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Section 121 and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). CERCLA Section 121 states:

*If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action no less often than each five years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented. In addition, if upon such review it is the judgment of the President that action is appropriate at such site in accordance with section [104] or [106], the President shall take or require such action. The President shall report to the Congress a list of facilities for which such review is required, the results of all such reviews, and any actions taken as a result of such reviews.*

The EPA interpreted this requirement further in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP); Title 40 Code of Federal Regulations (CFR) §300.430(f)(4)(ii) states:

*If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after the initiation of the selected remedial action.*

The North Carolina Department of Environment and Natural Resources (NC DENR), Division of Waste Management, Superfund Section, on behalf of the EPA, has conducted a FYR of the Potentially Responsible Party (PRP)-financed cleanup implemented at the Charles Macon Lagoon and Drum Storage Site (Macon Dockery Site or Site) (US EPA ID# NCD 980840409). The review was conducted from November 2014 through May 2015, and the methods, findings, conclusions, and significant issues found during the review are documented in this FYR report. This FYR was performed in a manner consistent with the latest EPA Comprehensive FYR Guidance (US EPA, 2001).

The Site consists of one operable unit (OU). The remedial action provides remediation of contaminated groundwater and contaminated soil. As stated in the 1991 Record of Decision (ROD) and as amended in the 1994 ROD Amendment, the remedy for soil and groundwater contamination consisted of soil vapor extraction (SVE) of soils in Lagoon 7; off-site disposal of soils in Lagoon 10; dismantling of the vessels (tanks, tankers, vats, etc.) and off-site disposal of vessel contents; and groundwater extraction, treatment (via air stripping and filtration), and discharge (to Solomon's Creek or an infiltration gallery).

The purpose of this FYR is to evaluate the remedy at the Site and to determine if the action remains protective of human health and the environment. More specifically, the purpose is:

- To confirm that the remedies, as specified in the 1991 ROD and subsequent 1994 ROD Amendment, remain effective at protecting human health and the environment (i.e., the remedies are operating and functioning as designed);
- To evaluate whether the clean-up levels specified in the RODs remain protective of human health and the environment; and
- To determine if any other information has come to light that could call into question the protectiveness of the remedy.

The triggering action for this policy review is the signing date of the Third FYR Report, May 11, 2010. As stated in the 1991 ROD, "The goal of this remedial action is to restore groundwater to its beneficial use as a drinking water source. Based on information obtained during the Remedial Investigation (RI) and on a careful analysis of all remedial alternatives, the EPA and the State of North Carolina believe that the selected remedy will achieve this goal."

The next FYR for the Charles Macon Lagoon and Drum Storage Site will be due within five years of the signature/approval date of this FYR.

## 2.0 Site Chronology

Table 1 lists the site chronology for selected events for the Site.

**Table 1: Site Chronology**

Event	Date
Initial discovery of the Site	November 1, 1983
US EPA conducted initial soil removal at the Macon property	November 23, 1983
US EPA conducted a removal of hazardous materials at the Dockery property	January 9, 1984
Preliminary assessment completed	March 27, 1985
Site inspection completed	March 31, 1986
US EPA proposed the Site for inclusion on the National Priorities List (NPL)	January 22, 1987
Site finalized on the NPL	July 22, 1987
Administrative Order on Consent signed	April 13, 1988
Removal Assessment completed	September 30, 1991
Combined Remedial Investigation and Feasibility Study (RI/FS) completed	September 30, 1991
Record of Decision (ROD) signed	September 30, 1991
US EPA issued an Unilateral Administrative Order (UAO)	June 22, 1992
Remedial Design completed	June 28, 1994
ROD Amendment signed	June 1, 1994
On-site construction initiated (RA start)	June 28, 1994
Remedial Action construction finished. System operational	February 1996
Superfund Preliminary Close-Out Report (PCOR) complete	November 6, 1996
First FYR completed	September 26, 2000
SVE system suspended	December 2, 2002
Lower Dockery Groundwater System suspended	March 19, 2004
Second FYR Completed	September 28, 2005
ESD signed to document a final decision to include institutional controls (ICs) as part of the groundwater remedy for the Site	December 17, 2009
Lower Macon Groundwater Remediation System Suspension Request	May 6, 2010
Third FYR completed	May 11, 2010
EPA Approval - Lower Macon Groundwater Remediation System Suspension Request	May 24, 2010
Final Post Active Remediation Report for the Lower Macon Area	January 23, 2012

## 3.0 Background

### 3.1 Site Description

As stated in the EPA guidance, the term "site"

*is best defined as that portion of a facility that includes the location of a release (or releases) of hazardous substances and wherever hazardous substances have come to be located. As such, the extent of a site is not limited by property boundaries, and does not include clean areas within a facility's property boundaries.*

U.S. Environmental Protection Agency, *Clarifying the Definition of "Site" Under the National Priorities List*, Publication 9320.2-10FS, PB95-963320, EPA 540/F-95/033, May 1996.

The Site does not include the entire area of either the Macon or Dockery property. Therefore, for purposes of referencing within this FYR, the Macon and Dockery properties are the actual property boundaries, which include both clean and contaminated areas. The portions of the Macon and Dockery properties in which contamination has been found and remediation has taken place or is occurring, will be referred to as the Macon Site and the Dockery Site, respectively. It should also be noted that within the Macon Site, there are three distinct identified locations: the Macon Source Area, the Upper Macon Site and the Lower Macon Site. Within the Dockery Site, there are two distinct identified areas: the Upper Dockery Site and the Lower Dockery Site. For purposes of the FYR, references to the Macon Dockery Site or the Site connote the entire Charles Macon Lagoon and Drum Storage Site.

The Macon Dockery Site operated as a waste oil recycling and antifreeze manufacturing facility from 1979 to 1982. The Site is located approximately 1 mile east of the Pee Dee River and 1.6 miles southwest of Cordova, Richmond County, North Carolina on State Road (SR) 1103. The Site is comprised of two non-contiguous, independently owned parcels of land: a 40-acre tract owned by relatives and heirs of Charles Macon and a one-acre tract owned by relatives and heirs of John Dockery. The Dockery property is located approximately 2,640 feet north of the Macon property entrance on the west side of SR 1103. The coordinates for the Macon Site are 34° 53' 30" North latitude, 79° 50' 18" West longitude. The coordinates for the Dockery Site are 34° 53' 52" North latitude and 79° 50' 18" West longitude. Figure 1a is a topographic site map of the Macon and Dockery properties.

The Macon property is primarily wooded with several cleared areas. The cleared areas contained drum storage, three unlined surface impoundments, and eleven waste oil lagoons. Figures 2 through 4 show the locations of Lagoons 1 through 9 in the Upper Macon Site and Lagoons 10 and 11 located on the southwest portion of the property or the Lower Macon Site. Three empty and unused surface impoundments were located on the northern portion of the Lower Macon Site. Several abandoned buildings remain on the Upper Macon Site where the majority of the oil reclamation and antifreeze manufacturing activities occurred.

The Dockery Site contained one unlined waste oil lagoon, as well as several drum disposal areas. The lagoon was located approximately 2,400 feet west of SR 1103 in a small clearing that forms the Lower Dockery Site. Drum storage on wooden pallets primarily occurred at the cleared area that is the Upper Dockery Site, Figures 2 and 3.

### **3.2 Site Topography, Geology, and Hydrogeology**

The Site is located in the western margin of the Sandhills Region of the Inner Coastal Plain Physiographic Province. The Sandhills region is characterized by deep sandy soil, rolling topography, and the highest elevations in the coastal plain. Four distinct hydrogeologic units were encountered at the Site. These units are distinguished primarily by differences in lithology and also by differences in relative permeabilities. In order of descending depth, these units include: a perched water table; a shallow saprolite aquifer; a transition zone of partially weathered rock; and a bedrock aquifer. The groundwater flow direction is to the west-northwest.

The Site lies on the Piedmont-Coastal Plain soil province boundary. The soils in the area are the Cecil and Iredell soils. The Cecil soils present at the Site are a gravelly loam, sandy loam and clay. The Iredell soils consist of loam underlain with sticky clay. The layer of residual soil and saprolite on competent bedrock at the Site is 30 to 95 feet thick. Residual soils are thickest in the area of the Upper Macon and Dockery Sites and thin westward with increasing proximity to the Pee Dee River. The unsaturated or vadose zone of soil ranges from 25 to 35 feet thick. The bedrock is granite or gneiss.

Surface water runoff on the Macon Site primarily drains to the west in the direction of Solomon's Creek. Water from the northern portion of the Macon Site enters either a small pond located in the western portion of the Lower Macon Site or an unnamed tributary to Solomon's Creek. Solomon's Creek enters the Pee Dee River approximately two miles downstream from the Site.

Surface water from the Dockery Site moves via numerous gullies and intermittent streams. Water leaving the northern portion of the Dockery Site enters a westward flowing unnamed tributary. This tributary enters the Pee Dee River approximately one mile west of the Site.

### **3.3 Land and Resource Use**

The former and current land use of the Site and surrounding area has been and continues to be primarily agricultural with limited residential use along SR 1103. Residential use increases northeast of the Site toward Cordova, located 1.6 miles northeast of the Site. In addition to residential use, the Site is also used for recreational purposes such as hunting and fishing. The land use for the Site and the surrounding area is not expected to change in the foreseeable future.

The primary source of drinking water in the area is private water supply wells. Based on information from the EPA Remedial Project Manager (RPM), all private drinking water wells are upgradient of the Site. No private drinking water wells are located in the interpreted downgradient direction of the groundwater contaminant plume.

### **3.4 History of Contamination**

From 1979 to 1982, Mr. Charles Macon operated a waste oil reclamation and antifreeze manufacturing facility at the Macon property. Waste oils were collected in eleven unlined lagoons, nine above-ground tanks, and two tankers on the property, and in one unlined lagoon on the Dockery property. Drums containing waste paints, solvents, acids and bases were also received and stored on the Macon and Dockery properties. Operations at the Site were terminated following the death of Mr. Macon in 1982.

A 1980 inspection of the Site found the waste oil stored in twelve unlined lagoons, which were overflowing and contaminating the surrounding ground. Inspectors also discovered 175 55-gallon drums in various stages of deterioration, many of which were broken or leaking. The drums contained waste such as methanol, toluene, vinyl thinners, epoxy, enamels, lacquers, ethyl acetate, caustic soda, and methylene chloride. Oil and sludge in the lagoons contained concentrations of lead, chromium, and barium in excess of Resource Conservation and Recovery Act (RCRA) thresholds.

### **3.5 Initial Response**

The EPA initiated a removal at the Macon property in November 1983. During the removal, a total of 3,123 tons of waste and 137,000 gallons of oil were removed from the Site. Reusable oil was taken to an oil reclamation facility and the Explosive Ordinance Disposal Unit of the US Army removed 246 calcium hydroxide flare charges. Oil and hydrocarbon sludges remaining in the lagoons were solidified, removed, and disposed off-site in a South Carolina RCRA-permitted hazardous waste facility. The lagoons were then filled, graded, and seeded with grass. All lagoons were excavated and backfilled with the exception of Lagoon 10. Lagoon 10 received five truckloads of solidified sludge from Lagoon 7, two truckloads of boiler fly ash, 43 crushed empty drums, and miscellaneous debris from the Site. Lagoon 10 was then capped with a synthetic liner and a three-foot thick clay cover.

Removal operations on the Dockery property began in January 1984. Hazardous materials at this portion of the Site were stored in one unlined surface impoundment and in approximately 230 55-gallon drums. A total of 709 tons of waste was removed from this area in an operation similar to that conducted on the Macon property.

Immediate removal activities at both properties were completed January 17, 1984. The EPA completed a geological and sampling investigation at the Site between February 1985 and March 1985. Based on the results of this investigative effort, the Site was proposed for the National Priorities List (NPL) on January 22, 1987, and was finalized on the NPL on July 22, 1987. The NPL is a list of priority releases for long-term evaluation and remedial response, and was promulgated pursuant to section 105 of the CERCLA, and Liability Act (CERCLA) of 1980, as amended. The NPL is found in the NCP (Appendix B of 40 CFR part 300).

### 3.6 Basis for Taking Action

On April 14, 1988, the EPA entered into an Administrative Order on Consent (AOC) with two PRPs (Clark Equipment Company and Crown, Cork, and Seal Company), which were responsible for over 50 percent of the volume of waste at the Site. The AOC outlined the terms under which the EPA would allow the PRPs to conduct the Remedial Investigation/Feasibility Study (RI/FS). The RI/FS was started in April 1988 and completed in September 1991. The RI field investigation was conducted in two phases. Phase I was conducted from September 1989 to January 1990, and Phase II from July 1990 to October 1990. The RI involved the installation of 34 boreholes and 19 monitoring wells and the collection of more than 100 surface soil, sediment, surface water, groundwater, and waste samples. Sampling indicated both volatile organic compound (VOC) and inorganic contamination in both the soil and groundwater. The contaminants of concern (COCs) for the Site are tetrachloroethene (PCE), trichloroethene (TCE), vinyl chloride, trichloroethane, dichloroethene, dichloroethane, manganese, chromium, lead, and polycyclic aromatic hydrocarbons (PAHs).

### 4.0 Remedial Actions

In accordance with CERCLA and the NCP, the overriding goals for any remedial action are protection of human health and the environment and compliance with Applicable or Relevant and Appropriate Requirements (ARARs). A number of remedial alternatives were considered for the Site, and final selection was made based on an evaluation of each alternative against nine evaluation criteria that are specified in Section 300.430(f)(5)(i) of the NCP. The nine criteria include:

1. Overall Protectiveness of Human Health and the Environment
2. Compliance with ARARs
3. Long-Term Effectiveness and Permanence
4. Reduction of Toxicity, Mobility or Volume of Contaminants through Treatment
5. Short-term Effectiveness
6. Implementability
7. Cost
8. State Acceptance
9. Community Acceptance

The Assessment of the Site in the 1991 ROD, states, *“The intent of this remedial action presented in this ROD is to reduce future risks at this Site. This remedial action will remove the threat posed by contaminated water and source soil contamination, and remove the threat posed by vessel contents at the Site. Remediating residual and source soil contamination will prevent contamination from adversely impacting groundwater and decrease the future risk associated with the Site soils.”* The Remedial Action Objectives (RAOs) as stated in the 1991 ROD are:



- Prevent or mitigate the continued release of hazardous substances, pollutants and contaminants from the Site;
- Eliminate or reduce the risks to human health associated with ingestion, inhalation, and/or direct contact with hazardous substances, pollutants or contaminants in the groundwater, surface water, and sediment;
- Eliminate or minimize the threat posed to public health and the environment from current and/or potential migration of hazardous substances in the groundwater;
- Reduce concentrations of hazardous substances, pollutants, or contaminants in soils and groundwater within the Site to levels specified by the performance standards; and,
- Reduce the mobility, toxicity and/or volume of hazardous substances, pollutants, or contaminants at the Site.

As noted in the ROD, the goal of the selected groundwater remedy is to restore the groundwater to its beneficial use. Because this remedy resulted in hazardous substances, pollutants, or contaminants remaining on-site above health-based levels that allow unlimited use and unrestricted exposure --i.e., contaminated groundwater remains on Site-- FYRs will be conducted after commencement of the remedial action to ensure that the remedy continues to provide adequate protection of human health and the environment.

#### **4.1 Remedy Selection**

##### **4.1.1 1991 Record of Decision**

The ROD issued September 30, 1991, provided for remediation of contaminated groundwater and contaminated soil.

##### **Soil**

As stated in the 1991 ROD, the remedial action for soil included the following:

- A soil vapor extraction (SVE) system to treat VOCs and SVOCs in-situ through a network of air withdrawal (or vacuum) wells installed vertically in the unsaturated zone to the water table. SVE was designated for use at Lagoon 7 for the removal of Tetrachloroethene (PCE), identified as the only compound in Site soils with the potential to cause groundwater to exceed groundwater remediation levels.
- Bioremediation of Lagoon 10, preceded by a Treatability Study to determine if the indigenous microbial population is capable of degrading PAHs in Lagoon 10.
- Vessel Remediation, including dismantling the vessels and appropriate disposition of vessels and contents: hazardous vessel contents to be taken to a RCRA-approved facility for disposal; and non-hazardous vessel contents and the vessel pieces to be recycled or sent to an industrial landfill for disposal.

**Groundwater.**

The remedial action for groundwater included groundwater extraction, treatment and overall monitoring program for the Site, including the following:

- Groundwater contaminated above the remediation levels indicated in the ROD to be extracted across the entire Site.
- Treatment of groundwater by means of an air-stripping tower to remove VOCs
- Discharge of treated groundwater either to surface water (Solomon’s Creek) or to an infiltration gallery, with any reduction in metals concentrations necessary to meet National Pollutant Discharge Elimination System (NPDES) requirements through filtration/coagulation or some other cost effective method.
- Contingent measures, should the EPA determine that any portions of the aquifer cannot be restored to their beneficial use, including
  - modification of engineered controls such as physical barriers or containment measures;
  - waiver of chemical-specific ARARs for those portions of the aquifer based on the technical impracticability of achieving further contaminant reduction;
  - Institutional controls (ICs) to restrict access to portions of the aquifer contaminated above health-based goals, since this aquifer is classified as a potential drinking water source;
  - Continued monitoring of specified wells; and
  - Periodic re-evaluation of remedial technologies for groundwater restoration.

Table 2 lists the groundwater remediation goals as specified in the 1991 ROD.

**Table 2: Groundwater Remediation Goals as Specified in the 1991 ROD**

<b>Contaminant</b>	<b>Remediation Goal (µg/L)</b>
Tetrachloroethene	1
Trichloroethene	2.8
1,1-Dichloroethene	7
1,2-Dichloroethene	70
Vinyl chloride	1
Benzene	1
1,1,1-Trichloroethane	200
Manganese	50

#### 4.1.2 1994 ROD Amendment

The ROD and Statement of Work (SOW) required that a bioremediation treatability evaluation of waste materials from Lagoon 10 be performed using indigenous microbial populations to degrade carcinogenic PAHs to a performance standard of 2 micrograms per Liter ( $\mu\text{g/L}$ ) total PAHs. However, based on the treatability study results and additional information regarding the nature of the waste obtained from sampling efforts within Lagoon 10, the EPA amended the remedy.

On June 1, 1994, the EPA signed a ROD Amendment to modify the soil remedy at the Site by deleting the requirement for bioremediation and providing for the excavation and off-site disposal of Lagoon 10 waste material. In addition, the groundwater remediation levels for three contaminants were changed: chloroform changed from 0.19  $\mu\text{g/L}$  to 1  $\mu\text{g/L}$ ; tetrachloroethene was changed from 0.7  $\mu\text{g/L}$  to 1  $\mu\text{g/L}$ ; and vinyl chloride was changed from 0.015  $\mu\text{g/L}$  to 1  $\mu\text{g/L}$ .

#### 4.1.3 2009 Explanation of Significant Difference

Since the ROD finalization date, issues concerning institutional controls (ICs) have been identified at the Site. The Remedial Action (RA) in the ROD provided that ICs, among other contingency measures, may be implemented and maintained to restrict access to those portions of the aquifer which remain above health-based goals if the extraction and treatment system is unable to accomplish the required reductions in contamination. The RA at the Site has not yet reduced contamination in the groundwater to acceptable levels. However, the EPA has not determined that the selected remedy cannot achieve remedial goals.

Because the ICs are needed not as a contingency contemplated in the ROD but for interim protectiveness, the EPA issued an Explanation of Significant Difference (ESD) on December 17, 2009. The ESD documents a final decision to include ICs to restrict drilling of any groundwater wells and extraction from the aquifer except in conjunction with the RA, until remedial goals are met. These ICs may include deed restrictions or covenants.

## 4.2 Remedy Implementation

### Soil

The Remedial Design (RD) for the Site was started in October 1992 and was completed by the PRPs in June 1994. The RA commenced June 28, 1994. Contaminated soil in Lagoon 10 was to be remediated through bioremediation of waste materials using indigenous microbial populations to degrade carcinogenic PAHs to a performance standard of 2 ppm total PAHs. However, based on the treatability study results and additional information regarding the nature of the waste obtained from sampling efforts within Lagoon 10, the EPA amended the ROD in June 1994 to provide for excavation and off-site disposal of Lagoon 10 waste materials. Hazardous materials remaining in tanks and vats were also to be transported to an appropriate off-site facility for disposal. RA activities included removal and off-site disposal of wastes from Lagoon 10, wastes from various vessels associated with facility operations, and

wastes generated during previous investigation activities. Remedial activities were completed at Lagoon 10 in November 1994.

The SVE system installed in the area of Lagoon 7 was constructed to remediate vadose zone soils beneath the former lagoon. The SVE system consisted of a series of wells used for vacuum extraction and soil venting. Remediation of Lagoon 7 was initiated on February 22, 1996. Air samples were collected from extraction well points and the exhaust side of the SVE system on a quarterly and semi-annual basis, respectively.

During the first FYR for the Site in 2000, a data review of the historical SVE system effluent results indicated that air samples collected from the individual SVE points and the SVE exhaust had been below the laboratory detection limits for VOCs since November 1997. In January 2000, the EPA requested sampling to determine if soils beneath Lagoon 7 had been remediated to the performance standard. Soil samples collected during this sampling event indicated that PCE concentrations were below the performance standard of 2 µg/L established for the Site. Based on this sampling data, in October 2000 the EPA and NC DENR approved decommissioning the SVE system, as well as abandoning the observation and extraction wells associated with this system. On December 27, 2002, well abandonment and decommissioning activities were completed for the SVE system.

### **Groundwater.**

The groundwater recovery system consists of a series of groundwater extraction wells located in strategic positions to provide hydraulic containment of the groundwater within Site boundaries. Four separate remediation systems were constructed for the following areas: Macon Source Area; Upper/Lower Macon; Upper Dockery; and Lower Dockery. The EPA and NC DENR conducted a pre-final inspection of the four groundwater treatment systems on December 18, 1995, and a final inspection on January 26, 1996. All four of the systems became fully operational on February 12, 1996. Groundwater treatment at all four areas consists of utilizing an air stripper to remove VOCs. The treated groundwater is then pumped through a filter for further cleansing before being discharged to an infiltration gallery on-site.

A total of seventeen groundwater extraction wells were placed on the Upper and Lower Macon Sites and piped to two separate treatment systems. The Upper Macon Source Area treatment system consists of five extraction wells in the former source area, which are provided with submersible pumps to remove contaminated water with the highest concentration of contaminants. The Lower Macon treatment system utilizes twelve jet pump extraction wells to contain and capture contaminated water and prevent further migration from the Site.

Eight extraction wells on the Upper Dockery Site are piped to a centrally located treatment system in that area. An electrical submersible pump collection system is used to extract the groundwater in the Upper Dockery Site. The Lower Dockery Site has five extraction wells utilizing the jet pump system, which pumps the extracted water to an independent treatment system in that area of the property. See Figures 1 through 4 for monitoring and extraction well locations.

In February 1995, the EPA and NC DENR approved discharge of treated groundwater from the air stripper directly to the infiltration gallery without treatment for metals.

On February 12, 2004, a request was made to suspend the operation of the Lower Dockery groundwater extraction and treatment system. VOCs in the associated groundwater wells (MW-16 and MW-24) had not exceeded the performance standards since 2001 and 1999, respectively. On March 19, 2004, use of the Lower Dockery extraction and treatment system was suspended, and quarterly monitoring of the two monitoring wells was conducted using low-flow sampling techniques in an effort to reduce turbidity and suspended solids. Based on review of historical data, the manganese concentrations observed in MW-24 appeared to be declining with time. It was speculated that the high manganese concentrations might be suspended solids within the formation or that the manganese concentration may be the process of reductive dechlorination. Based upon these potential explanations, information and data collected, and discussions with the EPA, no additional sampling or remediation is planned for the Lower Dockery Site.

Data collected indicated that the Lower Macon remediation system had achieved performance standards except for occasional exceedances of inorganic parameters (particularly manganese). The EPA approved a request to suspend operation of the Lower Macon system and a proposal for post-remediation monitoring. On May 20, 2010, the Lower Macon Remediation System was turned off.

As of January 2014, the remaining remediation systems are functioning and operating as designed.

### **4.3 System Operation/Operation and Maintenance**

#### **Operation and Maintenance (O&M)**

The Macon/Dockery Site Group (MDSG) submits Annual Summary Status Reports in accordance with Section XV- Progress Report of the Unilateral Administrative Order dated June 30, 1992. The primary activities associated with Operations and Maintenance (O&M) include:

- Weekly operation and maintenance of the systems;
- Semi-annual sampling of remediation system influents;
- Annual effluent and air quality sampling; and,
- Annual groundwater elevation measurements and groundwater sampling.

The most recent O&M information is reported in the Annual Summary Status Reports, data from the most recent sampling events in 2013 and 2014, and the 2012 Final Post Active Remediation Report for the Lower Dockery. These reports include evaluations of total gallons removed, average flow rate, mass VOC removal, total VOC removal since start-up, and percent operation for the period. Any issues associated with the operations and system maintenance and the resolutions of the issues are also included in these reports. The issues that affected the operation of the remedial systems (as reported in the most recent annual report) within the past year were frozen effluent lines, system shutdowns due to tripped circuit breakers, malfunctions of a fan motor (subsequently removed and replaced), leaking

effluent pipe, and a damaged shear element. Appendix D is a copy of the Annual Summary Status Report- June 1, 2013 – June 1, 2014.

O&M costs at the Site have fluctuated over the last five years. The O&M cost breakdown is as follows:

- 2010 - \$123,000
- 2011 - \$69,000 \*(\$99,500)
- 2012 - \$130,000 \*(\$99,500)
- 2013 - \$79,000
- 2014 - \$64,000

The costs for 2010 were consistent with the previous five years of operation. However, with the suspension of the active remediation of the Lower Macon system in 2010, followed by four quarters of Post Active Remediation Monitoring and reporting in 2011, the costs for 2011 and 2012 should be averaged to more accurately convey O&M costs for those 2 years. The notation by 2011 and 2012 costs indicates the averaged cost of O&M from 2011 and 2012.

## 5.0 Progress Since Last Five-Year Review

This is the Fourth FYR. The Protectiveness Statement for the Third FYR in 2010 indicated the Site was protective of human health and the environment. The protectiveness statement in the 2010 report stated:

*The remedies at the Charles Macon Lagoon and Drum Storage Site are currently protective of human health and the environment in the short-term because soil contamination was remediated through source removal and soil vapor extraction, and groundwater contamination is being remediated by extraction, treatment, and discharge to infiltration galleries. Currently no human exposure pathways exist to contaminated groundwater. However, in order for the remedies to be protective in the long-term, the following action needs to be taken to ensure long-term protectiveness: Implement institutional controls.*

Table 3 includes a summary of progress on recommendations from the Third FYR in 2010.

**Table 3: Progress on Recommendations from 2010 Third FYR**

Recommendation	Party Responsible	Milestone Date	Action Taken and Outcome	Date of Action (if applicable)
Implement Institutional controls and review implementation in next two years	US EPA, State, & PRPs	April 30, 2012	Not completed to date; however, the EPA and the State of NC have been in communication with the PRPs about ICs at the Site and have begun the process to implement deed restrictions on groundwater use on the entire Macon property and the affected acreage on the Dockery property.	NA

## **6.0 Five-Year Review Process**

### **6.1 Administrative Components**

The NC DENR Superfund Section conducted the FYR for the Charles Macon Lagoon and Drum Storage Site on behalf of the EPA. David Mattison (Environmental Engineer, NC DENR) and Stephanie Grubbs (Hydrogeologist, NC DENR Contractor) were responsible for gathering and reviewing data for this review and compiling all the information into the FYR Report for the EPA. Telephone and/or email discussions/interviews with Giezelle Bennett, the EPA RPM and Melissa Heath, the EPA Site Attorney were conducted. Other activities conducted for this review include document review (see Appendix A); completion of a Site Inspection Checklist (see Appendix B); community interview documentation and public notice submitted to the local newspaper (see Appendix C) by the community involvement coordinator, Angela Miller; and the FYR Report preparation.

### **6.2 Community Involvement**

The EPA conducts all community involvement activities regarding the remedial activities for the Site. On February 10, 2015, the EPA published a public notice in the *Richmond Daily Journal* announcing the commencement of the FYR process for the Site. A copy of the public notice is included in Appendix C.

The EPA will make the final FYR Report available to the public. Upon completion of the FYR, the EPA will publish a public notice in the *Richmond County Journal* announcing the release of the final FYR Report. Copies of the FYR Report will be placed for the public to view at: the EPA Record Center, 11<sup>th</sup> Floor, 61 Forsyth Street, SW, Atlanta, GA 30303; the information repository located at the Leath Memorial Library, 412 East Franklin Street, Rockingham, North Carolina 28739; and, on the EPA website (<http://www.epa.gov/superfund/index.htm>).

### **6.3 Document Review**

This FYR consisted of a review of relevant documents including but not limited to the signed ROD (1991); ROD Amendment (1994); Third FYR Report (2010); Annual Summary Status Report-June 1, 2012 to June 1, 2013; Annual Summary Status Report-June 1, 2013 to June 1, 2014; and Final Post Active Remediation Report for the Lower Macon Area (2012). Applicable groundwater clean-up standards and other ARARs, as listed in the ROD, were also reviewed and checked for updates. See Attachment 1 for a complete list of documents reviewed.

### **6.4 ARAR Review**

CERCLA Section 121 (d) (2) (A) requires that Superfund remedial actions attain “a degree of cleanup of hazardous substance, pollutants, and contaminants released into the environment and of control of further release at a minimum which assures protection of human health and the environment.” CERCLA § 121(d)(1), 42 U.S.C § 9621(d)(1). The RA must achieve a level of cleanup that at least

attains those requirements that are legally applicable or relevant and appropriate (ARARs). CERCLA § 121(d)(2)(A), 42 U.S.C § 9621(d)(2)(A).

Applicable requirements are those cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under federal environmental or state environmental or facility siting laws that specifically address a hazardous substance, RA, location, or other circumstance found at a CERCLA site. 40 C.F.R. § 300.5.

Relevant and appropriate requirements are those standards that, while not “applicable”, address problems or situations sufficiently similar to those encountered at the CERCLA site that their use is well suited to the particular site. 40 C.F.R. § 300.5. Only those state standards that are more stringent than federal requirements may be applicable or relevant and appropriate.

To-Be-Considered (TBC) criteria are non-promulgated advisories and guidance that are not legally binding, but should be considered in determining the necessary RA. For example, TBCs may be particularly useful in determining health-based levels where no ARARs exist or in developing the appropriate method for conducting a RA.

Chemical-specific ARARs are health- or risk-based numerical values or methodologies which, when applied to site-specific conditions, result in the establishment of numeric values. These values establish an acceptable amount of concentration of a chemical that may remain in, or be discharged to, the ambient environment. Examples of chemical-specific ARARs include maximum contaminant levels (MCLs) under the Federal Safe Drinking Water Act and ambient water quality criteria enumerated under the Federal Clean Water Act.

Action-specific ARARs are technology- or activity-based requirements or limits on actions taken with respect to a particular hazardous substance. These requirements are triggered by a particular remedial activity, such as discharge of contaminated groundwater or in-situ remediation.

Location-specific ARARs are restrictions on hazardous substances or the conduct of the response activities solely based on their location in a special geographic area. Examples include restrictions on activities in wetlands, sensitive habitats, and historic places.

RAs are required to comply with the chemical-specific ARARs identified in the ROD. In performing the FYR for compliance with ARARs, only those ARARs that address the protectiveness of the remedy are reviewed. Because the remedy at the Site currently addresses groundwater contamination, this FYR will discuss compliance with chemical-specific groundwater ARARs only.



#### 6.4.1 Original ARARs from the 1991 ROD

The 1991 ROD identified the following Federal and State chemical-specific ARARs:

##### Federal ARARs

- 40 CFR Parts 261, 263, 264, 265, and 268 promulgated under the authority of RCRA and RCRA as amended (40 USC Section 6901, 6905, 6912, 6924, 6925 et. seq.)
- Clean Water Act (CWA 33 USC Sections 1251-1376, 40 CFR Parts 121, 122, 125, and 131)
- Occupational Safety and Health Administration (29 CFR 1910, Part 120)
- Safe Drinking Water Act (40 USC Section 300; 40 CFR Part 141, 143)
- Clean Air Act (40 CFR Part 50, Part 60, Subpart A and Subpart B, and Part 61, USC 1857)

##### State ARARs

- Regulations for the Management of Hazardous Waste promulgated under the authority of the NC Waste Management Act (North Carolina Administrative Code (NCAC) Title 15A, Chapter 13A)
- NC Drinking Water and Groundwater Standards; Groundwater Classifications and Standards (NCAC Title 15 Chapter 2L)
- NC Surface Water Quality Standards (NCSWQS) Classification and Water Quality Standards (NCAC Title 15A Chapter 2B)
- NCSWQS Technology-Based Effluent Limitations (NCAC Title 15A Chapter 2, Subchapter 2B.0400)
- NC Drinking Water Act (NCDWA) (General Statutes Chapter 130A, NCAC 311-327)
- NC Air Pollution Control Regulations (NCAC Title 15A Chapter 2D and 2Q)

#### 6.4.2 Current Applicable ARARs

It is the EPA's policy that ARARs are generally "frozen" at the time of the ROD signature unless a "new or modified requirement calls into question the protectiveness of the selected remedy". 55 Fed. Reg. 8757 (March 8, 1990). The NC Classifications and Water Quality Standards Applicable to the Groundwater of North Carolina, NCAC Title 15A Subchapter 2L (NC 2L Standards), on which several of the remedial goals are based, were last amended on April 1, 2013. Two of the chemical-specific ARARs have changed for the COCs, trichloroethene and 1,1-dichloroethene, since the remediation goals assigned in the ROD. However, the NC 2L has become less stringent for both trichloroethene and 1,1-dichloroethene, currently 3 µg/L and 350 µg/L, compared with the remediation goals of 2.8 µg/L and 7 µg/L, respectively. Table 4 is a summary of previous and current ARARs for the groundwater COCs.

As stated previously, new standards do not indicate that the present standards are not protective. The EPA has indicated that the remediation goals set in the ROD are protective of human health and the environment. Since the remediation for soil contamination has been completed, ARARs relevant to remediation levels for soil were not discussed in this report.

**Table 4: Comparison of 1991 ROD Groundwater Remediation Goals to Current ARARs**

COC	1991 ROD groundwater remediation goal	Current NC 2L (As of April 1, 2013)	Current Federal CRQL	Current Federal MCLs	ARAR change?
µg/L					
Tetrachloroethene	1 <sup>a</sup>	0.7	0.5	5	No
Trichloroethene	2.8 <sup>b</sup>	3	0.5	5	Yes
1,1-dichloroethene	7 <sup>b</sup>	350	0.5	7	Yes
1,2-dichloroethene	70 <sup>b</sup>	70	0.5	5	No
Vinyl Chloride	1 <sup>a</sup>	0.03	0.5	2	No
1,1,1-Trichloroethane	200 <sup>b</sup>	200	0.5	200	No
Benzene	1 <sup>b</sup>	1	0.5	5	No
Manganese	50 <sup>b</sup>	50	NA	NA	No
Notes:					
<sup>a</sup> US EPA CRQL - US EPA CRQL for volatile compounds					
<sup>b</sup> NC 2L - North Carolina Administrative Code, Title 15A, Subchapter 2L, Classifications and Water Quality Standards Applicable to the Groundwater of North Carolina.					
<sup>c</sup> NA - No Federal standard (MCL and/or CRQL) exists for this compound					

## 6.5 Data Review

### Soil

In October 2000, the EPA and NC DENR approved decommissioning the SVE system, as well as abandoning the observation and extraction wells associated with this system. On December 27, 2002, well abandonment and decommissioning activities were completed for the SVE system.

### Groundwater.

The data review for the groundwater monitoring included an evaluation of the data collected since the previous FYR. The data reviewed is supplied in the Annual Summary Status Reports.

As stated in the Annual Summary Status Report - June 1, 2013 to June 1, 2014, sampling and analysis are conducted by Irminger Consulting, Inc., the environmental consultant retained by the MDSG. Groundwater elevation measurements and groundwater samples were collected once during the most current reporting period ending August 2014. Remediation system influent samples were collected on a semi-annual basis during the same reporting period. Air samples from the air exhaust stacks of the groundwater remediation systems and from ambient air at the property line, as well as effluent water samples from the remediation systems, were collected quarterly during the reporting period. The frequencies of groundwater sampling and groundwater elevation measurements have decreased from semi-annual to annual, based on a recommendation from the previous FYR. The effluent and air quality

sampling still remains quarterly, and the influent sampling has been conducted semi-annually since 2000. Mass removal estimates are calculated for each of the remedial systems on a quarterly basis. The estimates are based on quarterly flow volume and semi-annual influent concentration data. All data can be found in the Tables within Appendix D, Annual Summary Status Report - June 1, 2013 to June 1, 2014.

### **Influent/Effluent**

A measure of the system performance can be made based on the system's ability to reduce influent concentrations to remedial performance standards. Because system effluent is directed to an infiltration gallery, effluent concentrations are designed to be less than the remediation goals established for groundwater at the Site.

Based on the analytical reports of samples collected from the system effluent ports, there have been no exceedances of VOCs in the system effluent within the previous five years for the Upper Dockery, the Macon Source Area, and the Upper/Lower Macon. Effluent samples for inorganic compounds have been below the performance standard concentrations except for exceedances of manganese. Manganese concentrations in the Macon Source Area effluent have exceeded the 50 µg/L performance standard two times in the last five years (September 2013 and January 2014); however, manganese is not site related, and the effluent is not being discharged to surface water but is in a closed loop system with respect to the infiltration gallery. The State of North Carolina and the EPA agreed to waive the criteria for manganese. A summary of the effluent sampling analytical results is included in Appendix D (Table 3).

Water samples are collected from the influent ports of the remedial systems on a semi-annual basis. A summary of the influent sampling analytical results is included in Appendix D (Table 4).

### **Air Quality**

Air samples from the air exhaust stacks of the groundwater remediation systems and from the ambient air at the property line, as well as water effluent samples from the remediation systems, were collected quarterly during the reporting period. Within the previous five-years, all air analytical sample results are below requirements for the contaminants chloroform, 1,2-dichloroethene, trichloroethene, and toluene. A summary of the air quality sampling can be found in Attachment 4 (Table 13).

### **Groundwater**

Groundwater samples were collected semi-annually in 2005 and annually thereafter. Two wells in the Upper Dockery and four wells each in the Macon Source Area and the Upper/Lower Macon have been sampled.

#### **Upper Dockery**

Since 2010, the Upper Dockery has one well with exceedances in VOCs.

- MW-15 exceeded the 1,1-Dichloroethene (1,1-DCE) remediation goal (RG) of 7 µg/L in 2011 (18 µg/L), 2013 (160 µg/L), and 2014 (1,500 µg/L). The trichloroethene remediation

goal of 7 µg/L was exceeded in 2014 (12 µg/L). Exceedances were also observed in chromium, manganese, and lead.

### **Macon Source Area**

The Upper Macon Source Area has three wells with VOC exceedances.

- MW-2A has exceeded the remediation goals of 1,1-DCE, PCE and TCE since 2010. The levels have fluctuated, but the overall trend for MW-2A is a decline in the VOCs.
- MW-9 has exceeded the RGs for 1,1-DCE, PCE, TCE, and vinyl chloride. The overall trends of VOCs are fluctuating. 1,1-DCE results in 2011 were 29 µg/L, in 2012 levels increased to 93 µg/L but declined in 2014 to non-detect. PCE increased from 5.0 µg/L in 2010 to 22 µg/L in 2012 then decreased to 1.9 µg/L in 2014. TCE fluctuated from 3 µg/L in 2010 to 15 µg/L in 2011 and then decreased to 1.1 µg/L in 2014. Vinyl chloride has fluctuated between 3.2 µg/L in 2011 to non-detect in 2012 and to 1.5 µg/L in 2014. Barium, beryllium, chromium, manganese, nickel, vanadium and cadmium have also been above the RGs within the past five years.
- MW-11 had 2 exceedances of inorganics, barium and manganese in 2011 and 2012.
- MW-19 had exceedances in PCE. PCE declined from 3.7 µg/L in 2011 to 1.3 µg/L in 2014. Exceedances of chromium, beryllium, magnesium, nickel, and vanadium were also reported.

### **Upper/Lower Macon**

The Upper/Lower Macon has two wells with VOC exceedances and one well with inorganic exceedances. Groundwater samples from the Upper Macon are collected from wells MW-21 and MW-23 and from the Lower Macon from wells MW-13 and MW-22.

- MW-21 exceeded the RGs for 1,1-DCE, PCE, and TCE. 1,1-DCE results in 2010 were 46 µg/L, decreased in 2011 to 1.2 µg/L but increased to 60 µg/L in 2013, with a decrease in 2014 to 16 µg/L. The PCE concentrations have decreased since 2010, decreasing from 12 µg/L in 2010 to 4.7 in 2014. TCE has fluctuated within the past five sampling events from 5.4 µg/L in 2010 to 1.3 µg/L in 2014.
- MW-23 had two VOC exceedances. 1,1-DCE increased from a level of 7 µg/L in 2011 to the current 53 µg/L in 2014. PCE has fluctuated with 5.0 µg/L in 2010, 1.8 µg/L in 2011 and 2012 and 10 µg/L in 2014. Manganese was also above the RG from 2010 to present.
- MW-13 had no VOC detected and chromium, beryllium, manganese, and nickel as the only inorganic contaminants.
- MW-22 had no VOC detected and no exceedance of inorganic contaminants. However, the wells in the Lower Macon were only sampled in 2010 and 2011 after the suspension of the system on May 20, 2010.

During the FYR scoping meeting with the EPA, the RPM stated the plume is contained and the boundaries of the groundwater plume are known. A complete summary of the groundwater analytical results can be found in Appendix D (Table 12).

## **6.6 Site Inspection**

The Site inspection of the Macon Dockery Site was conducted on December 2, 2014. Attending the Site inspection were David Mattison (Environmental Engineer, NC DENR Superfund Section), Kenny Gullede (Technical Committee Chairman, MDSG), and Steve Irminger (Irminger Consulting, Inc.). During the inspection, fencing surrounding the individual treatment systems was undamaged and in good condition, and all groundwater treatment system monitoring records were noted as readily available and up-to-date. The treatment system was noted as being in good condition, all chemicals and equipment properly stored, and the system is operating and functioning as designed. However, it was also noted that as the groundwater extraction and treatment system ages, a variety of components may fail unexpectedly. The monitoring wells were properly secured, locked, functioning and in good condition, and all wells were easily located. See Appendix B for the completed site inspection checklist.

## **6.7 Interviews**

The EPA is responsible for contacting and interviewing the community surrounding the Site for concerns, comments, and/or questions regarding the remediation at the Site for the FYR. In the previous reviews, the owners of the property were interviewed, but in 2010 the sole owner of the Macon property passed away. No interviews were conducted for this FYR. A public notice was placed in the local newspaper informing the community of this review. The public notice is included in Appendix C.

## **7.0 Technical Assessment**

### **7.1 Question A: Is the remedy functioning as intended by the decision documents?**

Yes, the RA continues to operate as designed. The groundwater remedy is functioning as designed. The plume is contained and the boundaries have been defined. However, institutional controls have not been implemented to date.

In order to be protective of human health and to preserve the effectiveness of the remedy, ICs must be implemented and maintained until remedial goals are met. Therefore, the EPA is requiring placement of ICs on both parcels of the Site to restrict drilling of any groundwater wells and extraction of groundwater from the aquifer, except in conjunction with the Remedial Action. These ICs may include, but not be limited to, deed restrictions or covenants. An ESD was needed because ICs are not being instituted as the contingency contemplated in the ROD, but to provide additional protection of the public during continuing remedy implementation. The new restrictions will become part of the groundwater remedy for the Site.

Table 5 is a summary of the institutional controls evaluation.

**Table 5: Institutional Controls Evaluation Summary**

<b>Media</b>	<b>ICs Needed</b>	<b>ICs Called for in the Decision Documents</b>	<b>IC Objective</b>	<b>Instrument in Place</b>	<b>Notes</b>
Ground Water	Yes	Yes	ICs may include, but not be limited to, deed restrictions or covenants.	None	None
Soils	No	No	NA	NA	None

**7.2 Question B: Are the exposure assumptions, toxicity data, clean-up levels and remedial action objectives (RAOs) used at the time of the remedy still valid?**

Yes. The NC Classifications and Water Quality Standards Applicable to the Groundwater of North Carolina, NCAC Title 15A Subchapter 2L (NC 2L Standards), on which several of the remedial goals are based, were last amended on April 2013. Two of the chemical-specific ARARs have changed for the COCs since the remediation goals assigned in the ROD. However, the new NC 2L remedial goals are less stringent than the current ROD remediation goals. The EPA has indicated that the remediation goals set in the ROD are protective of human health and the environment.

There have been no changes in the physical conditions of the Site that would affect the protectiveness of the remedy. The exposure assumptions, toxicity data, clean-up levels, and RAOs used at the time of the remedy are still protective of human health and the environment.

**7.3 Question C: Has any other information come to light that could call into question the protectiveness of the remedy?**

No additional information has come to light that could call into question the protectiveness of the remedy.

**7.4 Technical Assessment Summary**

According to documents, the site inspection, and interviews with the EPA, the exposure pathway to contaminated soil and groundwater has been mitigated. There are no known current exposure routes to contaminated soil or groundwater. Permanent land use restrictions or other appropriate institutional controls need to be implemented at the Site for long-term protectiveness until the RGs are achieved.

## 8.0 Issues, Recommendations and Follow-Up Actions

Table 6 summarizes the site issue, recommendations and the follow-up actions.

**Table 6: Recommendations and Follow-Up Actions**

<b>OU(s): 01</b>	<b>Issue Category: Institutional Controls</b>			
	<b>Issue: Institutional Controls have not been implemented.</b>			
	<b>Recommendation: Implement permanent land use restrictions or other appropriate institutional controls at the Site.</b>			
<b>Affect Current Protectiveness</b>	<b>Affect Future Protectiveness</b>	<b>Implementing Party</b>	<b>Oversight Party</b>	<b>Milestone Date</b>
No	Yes	EPA/State	EPA	05/11/16

## 9.0 Protectiveness Statement

The remedies at the Charles Macon Lagoon and Drum Storage Site are currently protective of human health and the environment in the short-term because soil contamination was remediated through source removal and soil vapor extraction, and groundwater contamination is being remediated by extraction, treatment, and discharge to infiltration galleries. Currently, no human exposure pathways exist to contaminated groundwater. However, in order for the remedies to be protective in the long-term, institutional controls are required to ensure protectiveness.

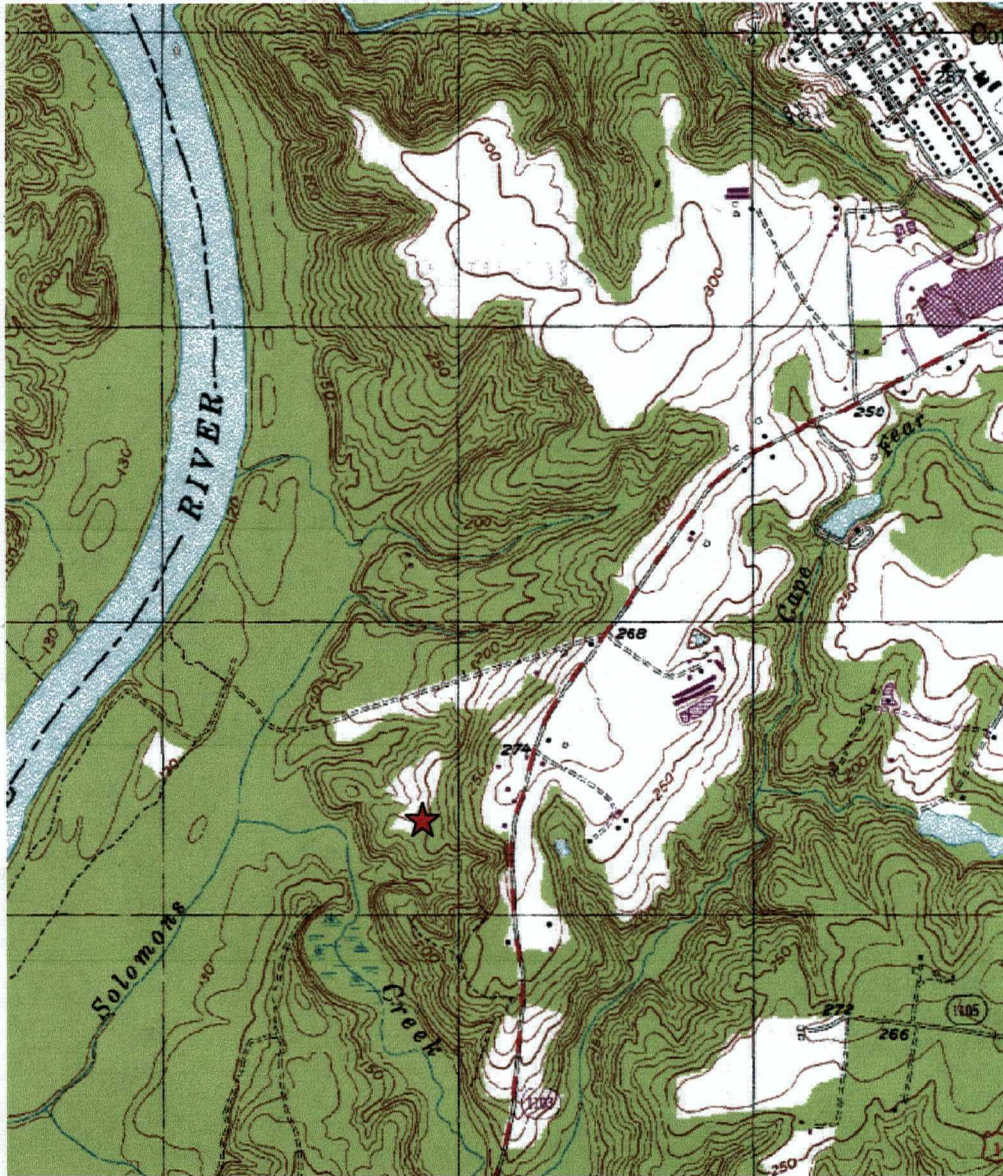
## 10.0 Next Review

The next FYR for the Charles Macon Lagoon and Drum Storage Site will be due within five years of the signature/approval date of this FYR.

**FIGURES**

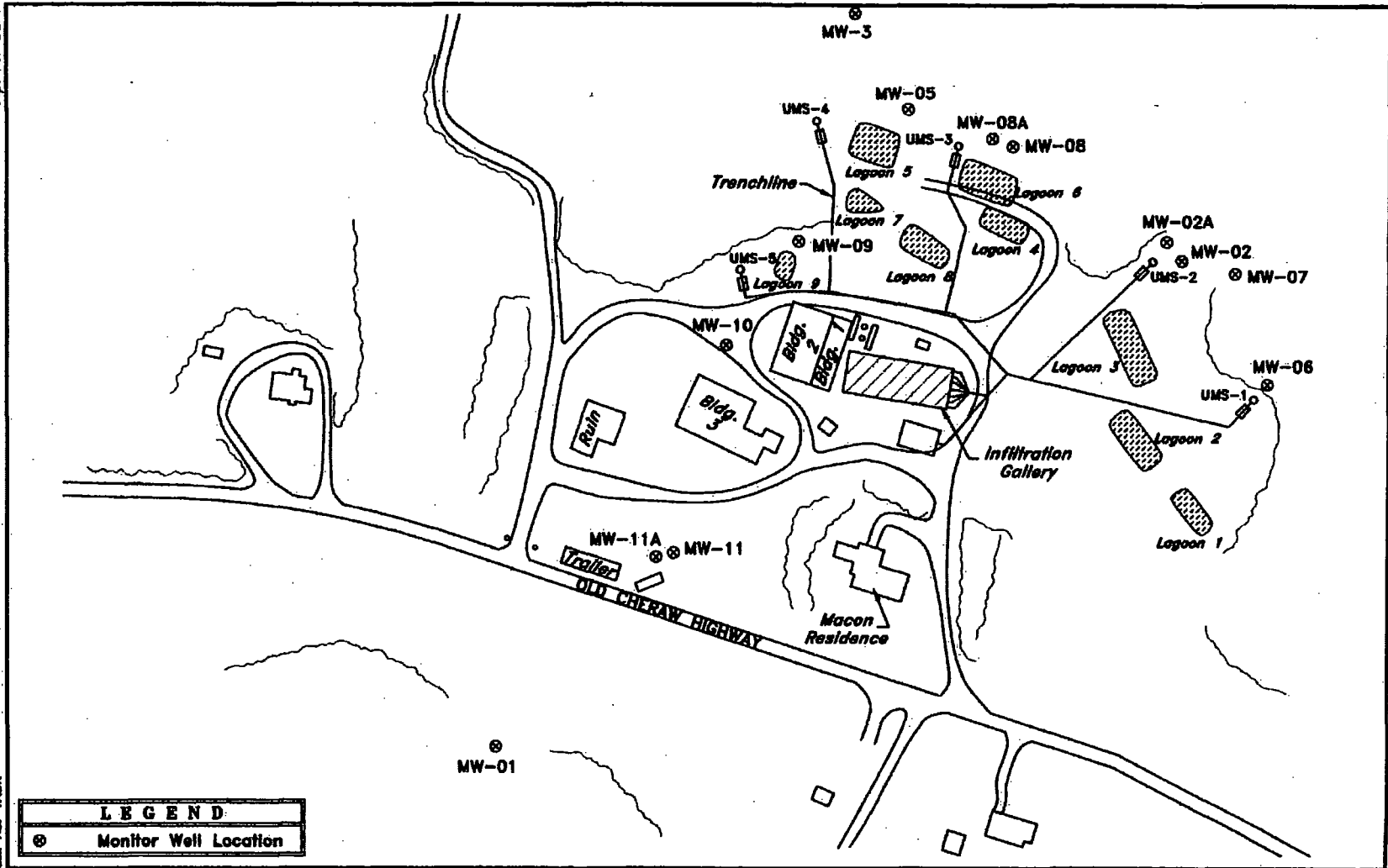


**FIGURE 1 A**  
**Topographic Location Map**  
**Macon Dockery Site – Cordova, North Carolina**



Map center is UTM 17 606188E 3862309N (WGS84/NAD83)  
Rockingham quadrangle - TopoZone Pro elevation display  
Projection is UTM Zone 17 NAD83 Datum

M\*  
G  
M=-7.681  
G=0.665

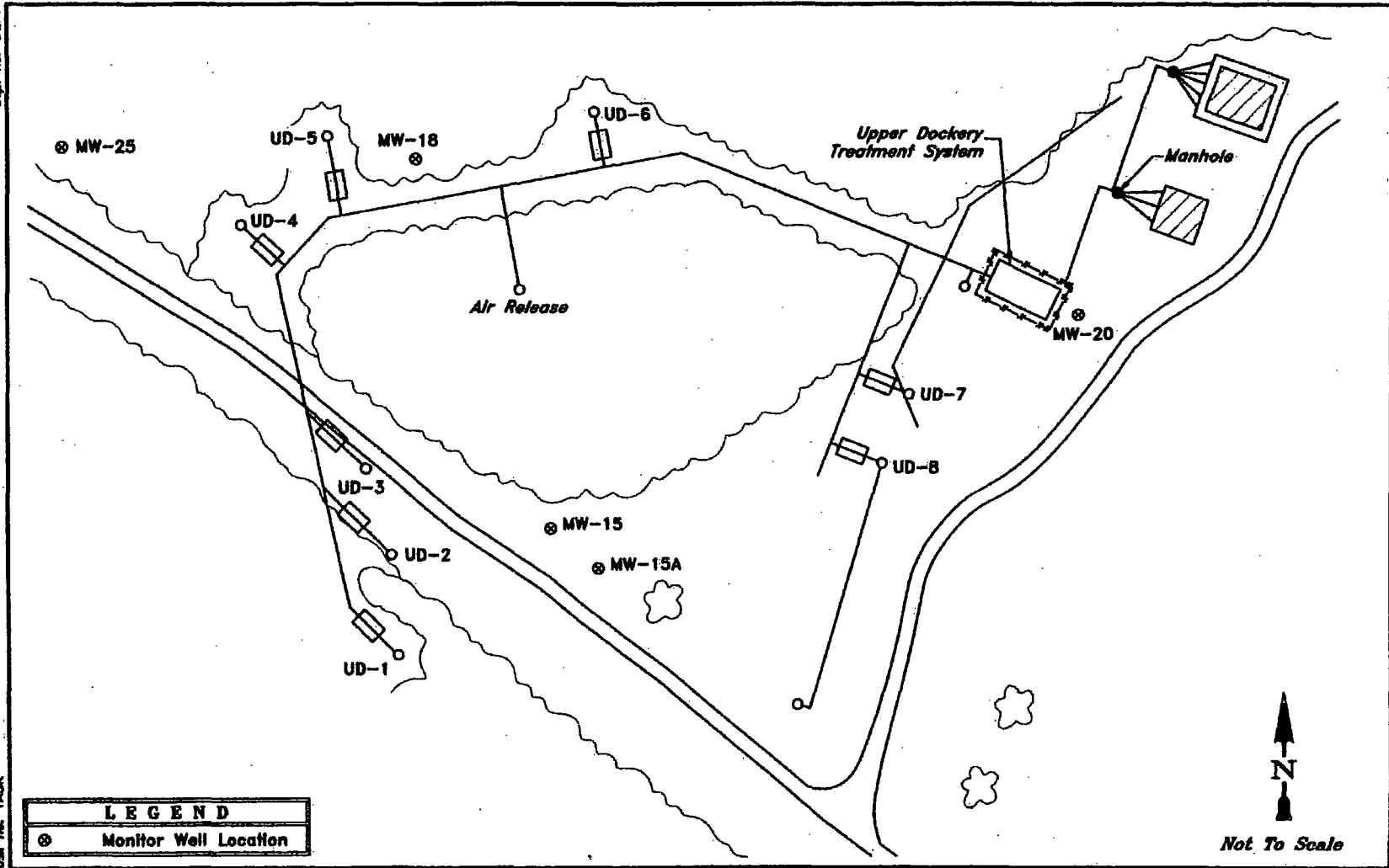


LEGEND	
⊗	Monitor Well Location

→	<b>IRMINGER CONSULTING, INC.</b>		<b>MACON DOCKERY SITE GROUP</b>	<b>UPPER MACON SOURCE AREA</b>	1
	0004-001	Made By: SEI    Date: 01-20-2005 Chgd By: SEI    Filename: 0004001			

Drawn By: DEPT

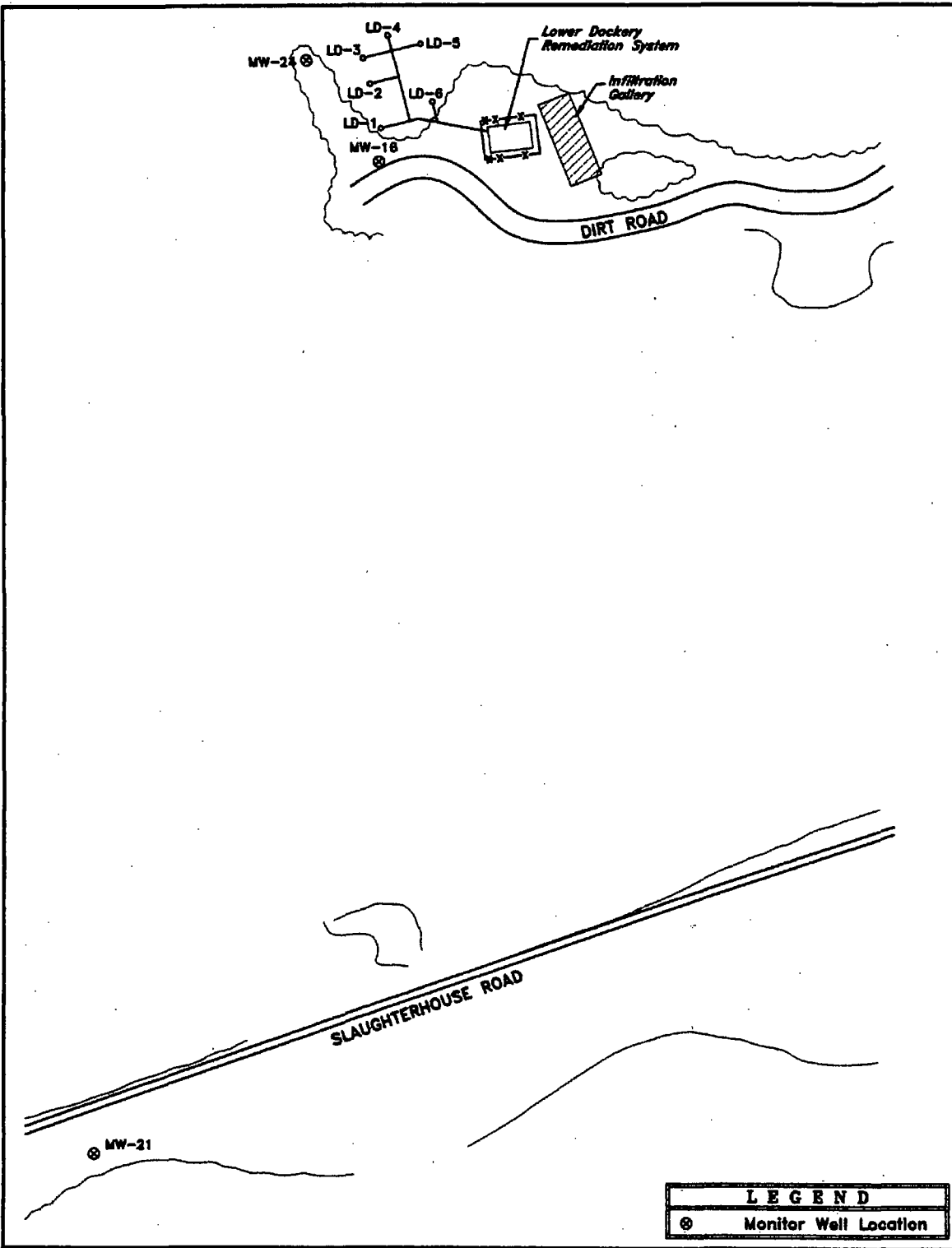
Task No: TASK



LEGEND	
⊙	Monitor Well Location

2	<b>IRMINGER CONSULTING, INC.</b>		<b>MACON DOCKERY SITE GROUP</b>	<b>UPPER DOCKERY</b>	2
	0004-001	Made By: SEJ    Date: 01-20-2005 Chkd By: SEJ    Filename: 0004001			

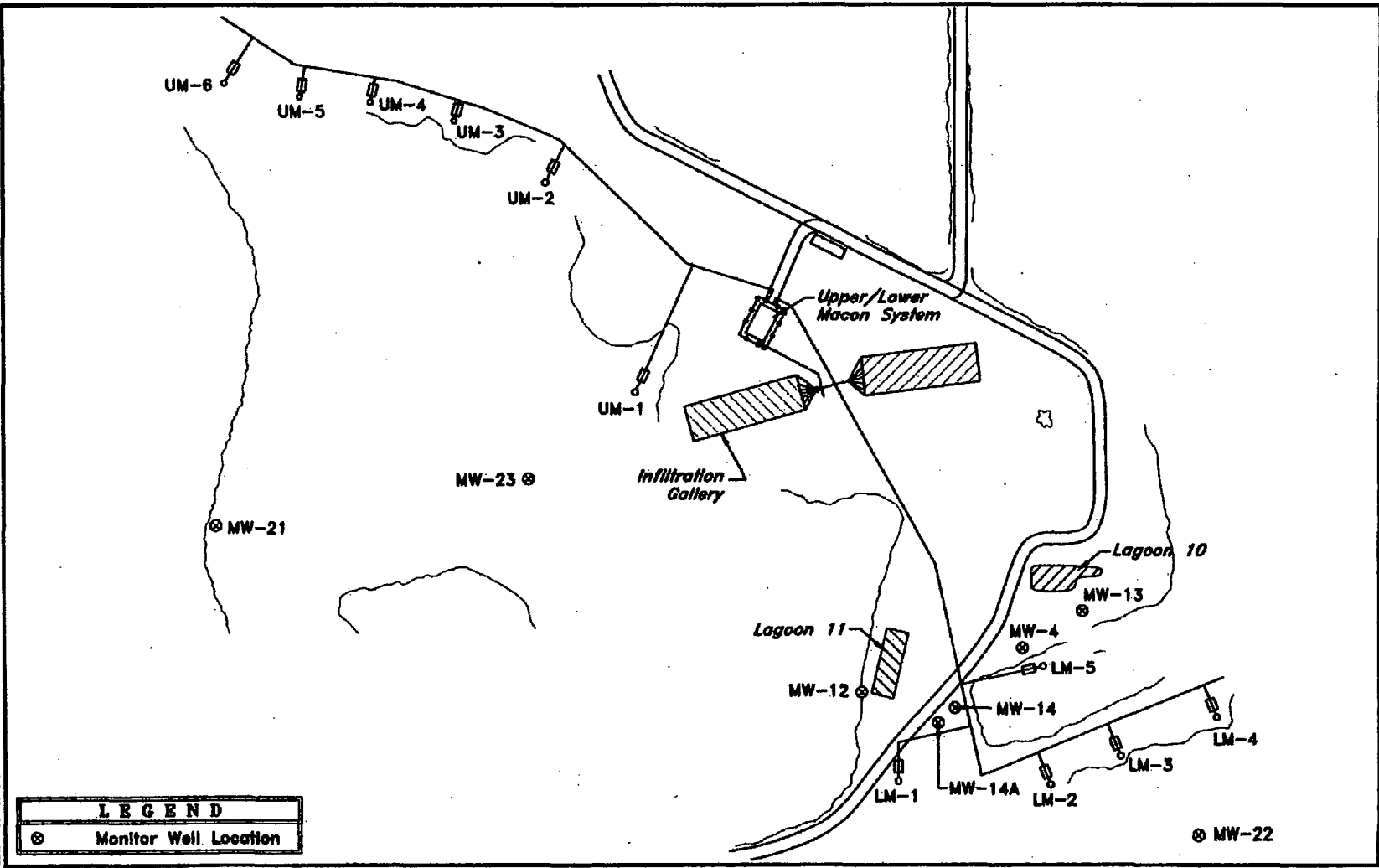
Dept No: DEPT



Task No: TASK

LEGEND	
⊗	Monitor Well Location

<b>IRMINGER CONSULTING, INC.</b>		<b>MACON DOCKERY SITE GROUP</b>	<b>LOWER DOCKERY</b>	<b>3</b>
0004-00	Made By: SEI    Date: 01-20-1999 Chkd By: SEI    Filename: FILENAME			



LEGEND	
⊙	Monitor Well Location

4	<b>IRMINGER CONSULTING, INC.</b>		<b>MACON DOCKERY SITE GROUP</b>	<b>UPPER/LOWER MACON</b>	4
	0004-001	<table border="1"> <tr> <td>Made By: SEJ</td> <td>Date: 01-20-2005</td> </tr> <tr> <td>Chkd By: SEJ</td> <td>Filename: 0004001</td> </tr> </table>			
Made By: SEJ	Date: 01-20-2005				
Chkd By: SEJ	Filename: 0004001				

**APPENDIX A**  
**List of Documents Reviewed**

**List of Documents Reviewed  
Charles Macon Lagoon and Drum Site  
Five-Year Review Report**

U.S. Environmental Protection Agency. September 30, 1991. Record Of Decision, Charles Macon Lagoon and Drum Site, Cordova, North Carolina.

U.S. Environmental Protection Agency. June 1, 1994. ROD Amendment, Charles Macon Lagoon and Drum Site, Cordova, North Carolina.

U.S. Environmental Protection Agency. September 26, 2000. Five-Year Review Report, Charles Macon Lagoon and Drum Site, Cordova, North Carolina.

U.S. Environmental Protection Agency. June 1, 1994. Explanation of Significant Difference, December 17, 2009. Charles Macon Lagoon and Drum Site, Cordova, North Carolina.

NC Department of Environment and Natural Resources. May 11, 2010. Five-Year Review Report, Charles Macon Lagoon and Drum Site, Cordova, North Carolina.

U.S. Environmental Protection Agency. May 24, 2010. EPA Approval for Lower Macon Groundwater Remediation system Suspension Request. Charles Macon Lagoon and Drum Site, Cordova, North Carolina.

Irminger Consulting Inc., January 23, 2012, Final Post Active Remediation Report for the Lower Macon Area, Charles Macon Lagoon and Drum Site, Cordova, North Carolina.

Irminger Consulting Inc., May 19, 2014, Annual Summary Status Report June 1, 2012 to June 1, 2013, Charles Macon Lagoon and Drum Site, Cordova, North Carolina.

Irminger Consulting Inc., August 20, 2014, Annual Summary Status Report June 1, 2013 to June 1, 2014, Charles Macon Lagoon and Drum Site, Cordova, North Carolina.

*Fourth Five-Year Review  
Charles Macon Lagoon and Drum Storage  
Cordova, Richmond County, NC*

**APPENDIX B**  
**Site Inspection Checklist and**  
**Photographs**



## Five-Year Review Site Inspection Checklist

I. SITE INFORMATION													
<b>Site name:</b> Charles Macon Lagoon & Drum Storage NPL Site	<b>Date of inspection:</b> December 2, 2014												
<b>Location and Region:</b> Cordova, NC, Region 4	<b>EPA ID:</b> NCD980840409												
<b>Agency, office, or company leading the five-year review:</b> David Mattison, NC DENR	<b>Weather/temperature:</b> ~45 °F, overcast												
<b>Remedy Includes:</b> (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; border: none;"><input type="checkbox"/> Landfill cover/containment</td> <td style="width: 50%; border: none;"><input type="checkbox"/> Monitored natural attenuation</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Access controls</td> <td style="border: none;"><input type="checkbox"/> Groundwater containment</td> </tr> <tr> <td style="border: none;"><input checked="" type="checkbox"/> Institutional controls</td> <td style="border: none;"><input type="checkbox"/> Vertical barrier walls</td> </tr> <tr> <td style="border: none;"><input checked="" type="checkbox"/> Groundwater pump and treatment</td> <td></td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Surface water collection and treatment</td> <td></td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Other _____</td> <td></td> </tr> </table>		<input type="checkbox"/> Landfill cover/containment	<input type="checkbox"/> Monitored natural attenuation	<input type="checkbox"/> Access controls	<input type="checkbox"/> Groundwater containment	<input checked="" type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls	<input checked="" type="checkbox"/> Groundwater pump and treatment		<input type="checkbox"/> Surface water collection and treatment		<input type="checkbox"/> Other _____	
<input type="checkbox"/> Landfill cover/containment	<input type="checkbox"/> Monitored natural attenuation												
<input type="checkbox"/> Access controls	<input type="checkbox"/> Groundwater containment												
<input checked="" type="checkbox"/> Institutional controls	<input type="checkbox"/> Vertical barrier walls												
<input checked="" type="checkbox"/> Groundwater pump and treatment													
<input type="checkbox"/> Surface water collection and treatment													
<input type="checkbox"/> Other _____													
<b>Attachments:</b> <input type="checkbox"/> Inspection team roster attached <input type="checkbox"/> Site map attached													
II. INTERVIEWS (Check all that apply)													
<b>1. O&amp;M site manager Steve Irminger</b> <div style="text-align: center;">Name</div>	<div style="text-align: center;">President Title</div> <div style="text-align: center;">December 2, 2014 Date</div>												
Interviewed <input checked="" type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone    Phone no _____ Problems, suggestions; <input type="checkbox"/> Report attached _____ Steven Irminger President Irminger Consulting, Inc. 7015 Erinbrook Drive Concord, North Carolina 28025 (704) 795-1585 voice and facsimile (704) 701-9099 Cellular <u><a href="http://www.irmingerconsulting.com">www.irmingerconsulting.com</a></u>													
<b>2. O&amp;M staff</b> _____ <div style="text-align: center;">Name</div>	<div style="text-align: center;">Title</div> <div style="text-align: center;">Date</div>												
Interviewed <input checked="" type="checkbox"/> at site <input type="checkbox"/> at office <input type="checkbox"/> by phone    Phone no. _____ Problems, suggestions; <input type="checkbox"/> Report attached _____ _____													



<b>III. ON-SITE DOCUMENTS &amp; RECORDS VERIFIED (Check all that apply)</b>				
1.	<b>O&amp;M Documents</b>	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
	<input type="checkbox"/> O&M manual	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
	<input type="checkbox"/> As-built drawings	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
	<input type="checkbox"/> Maintenance logs	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
	Remarks: Maintained at Irminger Consulting with relevant documents such as the O&M Manual, As-built drawings, and pertinent maintenance logs brought on-site during weekly inspections.			
2.	<b>Site-Specific Health and Safety Plan</b>	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
	<input type="checkbox"/> Contingency plan/emergency response plan	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
	Remarks: Maintained at Irminger Consulting and brought on-site during weekly inspections.			
3.	<b>O&amp;M and OSHA Training Records</b>	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
	Remarks: Maintained at Irminger Consulting.			
4.	<b>Permits and Service Agreements</b>			
	<input type="checkbox"/> Air discharge permit	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
	<input type="checkbox"/> Effluent discharge	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
	<input type="checkbox"/> Waste disposal, POTW	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
	<input type="checkbox"/> Other permits _____	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
	Remarks: Maintained at Irminger Consulting.			
5.	<b>Gas Generation Records</b>	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
	Remarks: _____			
6.	<b>Settlement Monument Records</b>	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
	Remarks: _____			
7.	<b>Groundwater Monitoring Records</b>	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
	Remarks: Maintained at Irminger Consulting.			
8.	<b>Leachate Extraction Records</b>	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
	Remarks: _____			
9.	<b>Discharge Compliance Records</b>			
	<input type="checkbox"/> Air	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
	<input type="checkbox"/> Water (effluent)	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
	Remarks: Maintained at Irminger Consulting.			
10.	<b>Daily Access/Security Logs</b>	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	<input type="checkbox"/> N/A
	Remarks: _____			

<b>C. Institutional Controls (ICs)</b>			
1.	<b>Implementation and enforcement</b>		
	Site conditions imply ICs not properly implemented	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> N/A
	Site conditions imply ICs not being fully enforced	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> N/A
	Type of monitoring (e.g., self-reporting, drive by) Self Reporting with Weekly Inspections		
	Frequency Weekly		
	Responsible party/agency Macon Dockery Site Group		
	Contact: Steve Irminger		
	Name	Title	Date Phone no.
	Reporting is up-to-date	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> N/A
	Reports are verified by the lead agency	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> N/A
	Specific requirements in deed or decision documents have been met	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> N/A
	Violations have been reported	<input type="checkbox"/> Yes	<input type="checkbox"/> No <input type="checkbox"/> N/A
	Other problems or suggestions: <input type="checkbox"/> Report attached		
	Institutional controls in the form of perpetual land use restrictions have not been implemented on the two parcels comprising the Charles Macon Lagoon & Drum Storage NPL Site. However, Irminger Consulting continues to maintain the site and the groundwater extraction and treatment systems. As such, the remedy is protective in the short term.		
2.	<b>Adequacy</b>	<input type="checkbox"/> ICs are adequate	<input type="checkbox"/> ICs are inadequate <input type="checkbox"/> N/A
	Remarks: Institutional controls in the form of perpetual land use restrictions have not been implemented on the two parcels comprising the Charles Macon Lagoon & Drum Storage NPL Site. In order for the remedy to be protective in the long term, perpetual land use restrictions must be implemented.		
<b>D. General</b>			
1.	<b>Vandalism/trespassing</b>	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> No vandalism evident
	Remarks _____		
2.	<b>Land use changes on site</b>	<input type="checkbox"/> N/A	
	Remarks: The parcels continue in use as a mix of rural, agricultural and residential use.		
3.	<b>Land use changes off site</b>	<input type="checkbox"/> N/A	
	Remarks: The surrounding area continues to exist as a mix of rural, agricultural and residential use.		
<b>VI. GENERAL SITE CONDITIONS</b>			
<b>A. Roads</b>		<input type="checkbox"/> Applicable	<input type="checkbox"/> N/A
1.	<b>Roads damaged</b>	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Roads adequate <input type="checkbox"/> N/A
	Remarks _____		

<b>IV. O&amp;M COSTS</b>			
<b>1.</b>	<b>O&amp;M Organization</b>		
	<input type="checkbox"/> State in-house	<input type="checkbox"/> Contractor for State	
	<input type="checkbox"/> PRP in-house	<input type="checkbox"/> Contractor for PRP	
	<input type="checkbox"/> Federal Facility in-house	<input type="checkbox"/> Contractor for Federal Facility	
	<input type="checkbox"/> Other _____		
<b>2.</b>	<b>O&amp;M Cost Records – Not Available</b>		
	<input type="checkbox"/> Readily available	<input type="checkbox"/> Up to date	
	<input type="checkbox"/> Funding mechanism/agreement in place		
	Original O&M cost estimate _____	<input type="checkbox"/> Breakdown attached	
	Total annual cost by year for review period if available		
	From _____ To _____	_____	<input type="checkbox"/> Breakdown attached
	Date                      Date	Total cost	
	From _____ To _____	_____	<input type="checkbox"/> Breakdown attached
	Date                      Date	Total cost	
	From _____ To _____	_____	<input type="checkbox"/> Breakdown attached
	Date                      Date	Total cost	
	From _____ To _____	_____	<input type="checkbox"/> Breakdown attached
	Date                      Date	Total cost	
<b>3.</b>	<b>Unanticipated or Unusually High O&amp;M Costs During Review Period</b>		
	Describe costs and reasons: As the groundwater extraction and treatment systems age, a variety of components may fail unexpectedly.		
<b>V. ACCESS AND INSTITUTIONAL CONTROLS</b> <input type="checkbox"/> Applicable <input type="checkbox"/> N/A			
<b>A. Fencing</b>			
<b>1.</b>	<b>Fencing damaged</b>	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Gates secured <input type="checkbox"/> N/A
	Remarks: Fencing surrounding the individual treatment systems is undamaged and in good condition.		
<b>B. Other Access Restrictions</b>			
<b>1.</b>	<b>Signs and other security measures</b>	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> N/A
	Remarks:		

<b>B. Other Site Conditions</b>			
Remarks _____			
<b>VII. LANDFILL COVERS</b> <input type="checkbox"/> Applicable <input type="checkbox"/> N/A			
<b>A. Landfill Surface</b>			
1.	<b>Settlement (Low spots)</b> Areal extent _____ Remarks _____	<input type="checkbox"/> Location shown on site map Depth _____	<input type="checkbox"/> Settlement not evident
2.	<b>Cracks</b> Lengths _____    Widths _____    Depths _____ Remarks _____	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Cracking not evident
3.	<b>Erosion</b> Areal extent _____ Remarks _____	<input type="checkbox"/> Location shown on site map Depth _____	<input type="checkbox"/> Erosion not evident
4.	<b>Holes</b> Areal extent _____ Remarks _____	<input type="checkbox"/> Location shown on site map Depth _____	<input type="checkbox"/> Holes not evident
5.	<b>Vegetative Cover</b> <input type="checkbox"/> Grass <input type="checkbox"/> Cover properly established <input type="checkbox"/> No signs of stress <input type="checkbox"/> Trees/Shrubs (indicate size and locations on a diagram) Remarks _____		
6.	<b>Alternative Cover (armored rock, concrete, etc.)</b> <input type="checkbox"/> N/A Remarks _____		
7.	<b>Bulges</b> Areal extent _____ Remarks _____	<input type="checkbox"/> Location shown on site map Height _____	<input type="checkbox"/> Bulges not evident
8.	<b>Wet Areas/Water Damage</b> <input type="checkbox"/> Wet areas <input type="checkbox"/> Ponding <input type="checkbox"/> Seeps <input type="checkbox"/> Soft subgrade Remarks _____	<input type="checkbox"/> Wet areas/water damage not evident <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Location shown on site map <input type="checkbox"/> Location shown on site map	Areal extent _____ Areal extent _____ Areal extent _____ Areal extent _____
9.	<b>Slope Instability</b> <input type="checkbox"/> Slides Areal extent _____ Remarks _____	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> No evidence of slope instability

<b>B. Benches</b> <input type="checkbox"/> Applicable <input type="checkbox"/> N/A (Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)		
1.	<b>Flows Bypass Bench</b> Remarks _____ _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> N/A or okay
2.	<b>Bench Breached</b> Remarks _____ _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> N/A or okay
3.	<b>Bench Overtopped</b> Remarks _____ _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> N/A or okay
<b>C. Letdown Channels</b> <input type="checkbox"/> Applicable <input type="checkbox"/> N/A (Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)		
1.	<b>Settlement</b> Areal extent _____                      Depth _____ Remarks _____ _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of settlement
2.	<b>Material Degradation</b> <input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of degradation Material type _____                      Areal extent _____ Remarks _____ _____	
3.	<b>Erosion</b> Areal extent _____                      Depth _____ Remarks _____ _____	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of erosion

4.	<b>Undercutting</b>	<input type="checkbox"/> Location shown on site map <input type="checkbox"/> No evidence of undercutting Areal extent _____ Depth _____	
Remarks _____			
5.	<b>Obstructions</b>	Type _____ <input type="checkbox"/> No obstructions <input type="checkbox"/> Location shown on site map Areal extent _____ Size _____	
Remarks _____			
6.	<b>Excessive Vegetative Growth</b>	Type _____	
<input type="checkbox"/> No evidence of excessive growth <input type="checkbox"/> Vegetation in channels does not obstruct flow <input type="checkbox"/> Location shown on site map Areal extent _____			
Remarks _____			
<b>D. Cover Penetrations</b> <input type="checkbox"/> Applicable <input type="checkbox"/> N/A			
1.	<b>Gas Vents</b>	<input type="checkbox"/> Active <input type="checkbox"/> Passive <input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A	
Remarks _____			
2.	<b>Gas Monitoring Probes</b>	<input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A	
Remarks _____			
3.	<b>Monitoring Wells (within surface area of landfill)</b>	<input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A	
Remarks _____			
4.	<b>Leachate Extraction Wells</b>	<input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning <input type="checkbox"/> Routinely sampled <input type="checkbox"/> Good condition <input type="checkbox"/> Evidence of leakage at penetration <input type="checkbox"/> Needs Maintenance <input type="checkbox"/> N/A	
Remarks _____			
5.	<b>Settlement Monuments</b>	<input type="checkbox"/> Located <input type="checkbox"/> Routinely surveyed <input type="checkbox"/> N/A	
Remarks _____			



<b>E. Gas Collection and Treatment</b>		Γ Applicable	Γ N/A
1.	<b>Gas Treatment Facilities</b> Γ Flaring      Γ Thermal destruction      Γ Collection for reuse Γ Good condition Γ Needs Maintenance Remarks _____ _____		
2.	<b>Gas Collection Wells, Manifolds and Piping</b> Γ Good condition Γ Needs Maintenance Remarks _____ _____		
3.	<b>Gas Monitoring Facilities</b> (e.g., gas monitoring of adjacent homes or buildings) Γ Good condition Γ Needs Maintenance      Γ N/A Remarks _____ _____		
<b>F. Cover Drainage Layer</b>		Γ Applicable	Γ N/A
1.	<b>Outlet Pipes Inspected</b> Γ Functioning      Γ N/A Remarks _____ _____		
2.	<b>Outlet Rock Inspected</b> Γ Functioning      Γ N/A Remarks _____ _____		
<b>G. Detention/Sedimentation Ponds</b>		Γ Applicable	Γ N/A
1.	<b>Siltation</b> Areal extent _____      Depth _____      Γ N/A Γ Siltation not evident Remarks _____ _____		
2.	<b>Erosion</b> Areal extent _____      Depth _____ Γ Erosion not evident Remarks _____ _____		
3.	<b>Outlet Works</b> Γ Functioning      Γ N/A Remarks _____ _____		
4.	<b>Dam</b> Γ Functioning      Γ N/A Remarks _____ _____		

<b>H. Retaining Walls</b>		<input type="checkbox"/> Applicable	<input type="checkbox"/> N/A
1.	<b>Deformations</b> Horizontal displacement _____ Rotational displacement _____ Remarks _____	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Deformation not evident
2.	<b>Degradation</b> Remarks _____	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Degradation not evident
<b>I. Perimeter Ditches/Off-Site Discharge</b>		<input type="checkbox"/> Applicable	<input type="checkbox"/> N/A
1.	<b>Siltation</b> Areal extent _____ Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Siltation not evident
2.	<b>Vegetative Growth</b> Vegetation does not impede flow Areal extent _____ Type _____ Remarks _____	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> N/A
3.	<b>Erosion</b> Areal extent _____ Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Erosion not evident
4.	<b>Discharge Structure</b> Remarks _____	<input type="checkbox"/> Functioning	<input type="checkbox"/> N/A
<b>VIII. VERTICAL BARRIER WALLS</b>		<input type="checkbox"/> Applicable	<input type="checkbox"/> N/A
1.	<b>Settlement</b> Areal extent _____ Depth _____ Remarks _____	<input type="checkbox"/> Location shown on site map	<input type="checkbox"/> Settlement not evident
2.	<b>Performance Monitoring</b> Type of monitoring _____ Performance not monitored Frequency _____ Head differential _____ Remarks _____	<input type="checkbox"/> Evidence of breaching	

<b>IX. GROUNDWATER/SURFACE WATER REMEDIES</b> ☒ Applicable    Γ N/A	
<b>A. Groundwater Extraction Wells, Pumps, and Pipelines</b> ☒ Applicable    Γ N/A	
1.	<b>Pumps, Wellhead Plumbing, and Electrical</b> ☒ Good condition ☒ All required wells properly operating    Γ Needs Maintenance    Γ N/A Remarks _____ _____ _____
2.	<b>Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances</b> ☒ Good condition    Γ Needs Maintenance Remarks _____ _____ _____
3.	<b>Spare Parts and Equipment</b> ☒ Readily available    ☒ Good condition    Γ Requires upgrade    Γ Needs to be provided Remarks _____ _____ _____
<b>B. Surface Water Collection Structures, Pumps, and Pipelines</b> Γ Applicable    ☒ N/A	
1.	<b>Collection Structures, Pumps, and Electrical</b> Γ Good condition    Γ Needs Maintenance Remarks _____ _____ _____
2.	<b>Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances</b> Γ Good condition    Γ Needs Maintenance Remarks _____ _____ _____
3.	<b>Spare Parts and Equipment</b> Γ Readily available    Γ Good condition    Γ Requires upgrade    Γ Needs to be provided Remarks _____ _____ _____

<b>C. Treatment System</b>	<input type="checkbox"/> Applicable	<input type="checkbox"/> N/A
<p>1. <b>Treatment Train</b> (Check components that apply)</p> <p><input type="checkbox"/> Metals removal                      <input type="checkbox"/> Oil/water separation                      <input type="checkbox"/> Bioremediation</p> <p><input type="checkbox"/> Air stripping    <input type="checkbox"/> Carbon adsorbers</p> <p><input type="checkbox"/> Filters Sediment _____</p> <p><input type="checkbox"/> Additive (e.g., chelation agent, flocculent) _____</p> <p><input type="checkbox"/> Others _____</p> <p><input type="checkbox"/> Good condition                      <input type="checkbox"/> Needs Maintenance</p> <p><input type="checkbox"/> Sampling ports properly marked and functional</p> <p><input type="checkbox"/> Sampling/maintenance log displayed and up to date</p> <p><input type="checkbox"/> Equipment properly identified</p> <p><input type="checkbox"/> Quantity of groundwater treated annually: See Annual Summary Status Report – June 1, 2013 to June 1, 2014</p> <p><input type="checkbox"/> Quantity of surface water treated annually _____</p> <p>Remarks _____</p>		
<p>2. <b>Electrical Enclosures and Panels</b> (properly rated and functional)</p> <p><input type="checkbox"/> N/A                      <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance</p> <p>Remarks _____</p>		
<p>3. <b>Tanks, Vaults, Storage Vessels</b></p> <p><input type="checkbox"/> N/A                      <input type="checkbox"/> Good condition <input type="checkbox"/> Proper secondary containment                      <input type="checkbox"/> Needs Maintenance</p> <p>Remarks _____</p>		
<p>4. <b>Discharge Structure and Appurtenances</b></p> <p><input type="checkbox"/> N/A                      <input type="checkbox"/> Good condition <input type="checkbox"/> Needs Maintenance</p> <p>Remarks _____</p>		
<p>5. <b>Treatment Building(s)</b></p> <p><input type="checkbox"/> N/A                      <input type="checkbox"/> Good condition (esp. roof and doorways)                      <input type="checkbox"/> Needs repair</p> <p><input type="checkbox"/> Chemicals and equipment properly stored</p> <p>Remarks _____</p>		
<p>6. <b>Monitoring Wells</b> (pump and treatment remedy)</p> <p><input type="checkbox"/> Properly secured/locked <input type="checkbox"/> Functioning                      <input type="checkbox"/> Routinely sampled                      <input type="checkbox"/> Good condition</p> <p><input type="checkbox"/> All required wells located                      <input type="checkbox"/> Needs Maintenance                      <input type="checkbox"/> N/A</p> <p>Remarks _____</p>		
<b>D. Monitoring Data</b>		
<p>1. <b>Monitoring Data</b></p> <p><input type="checkbox"/> Is routinely submitted on time                      <input type="checkbox"/> Is of acceptable quality</p>		
<p>2. <b>Monitoring data suggests:</b></p> <p><input type="checkbox"/> Groundwater plume is effectively contained                      <input type="checkbox"/> Contaminant concentrations are declining</p>		

<b>D. Monitored Natural Attenuation</b>			
1.	<b>Monitoring Wells</b> (natural attenuation remedy)		
	<input type="checkbox"/> Properly secured/locked	<input type="checkbox"/> Functioning	<input type="checkbox"/> Routinely sampled
	<input type="checkbox"/> All required wells located	<input type="checkbox"/> Needs Maintenance	<input type="checkbox"/> Good condition
	Remarks _____		<input type="checkbox"/> N/A
<b>X. OTHER REMEDIES</b>			
If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.			
<b>XI. OVERALL OBSERVATIONS</b>			
<b>A. Implementation of the Remedy</b>			
<p>Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).</p> <p>Please see the <i>Final Five Year Review Report</i> for a complete description of the various remedies implemented at the Charles Macon Lagoon &amp; Drum Storage NPL Site located in Cordova NC. The groundwater remedy as stated in the ROD was to extract groundwater and treat the contaminated groundwater on site via an air stripper and filtration, and discharge the treated water to an infiltration gallery. Four separate remediation systems were constructed for the following areas: Macon Source Area; Upper/Lower Macon; Upper Dockery; and, Lower Dockery. In February 1995, the US EPA and the North Carolina Department of Natural Resources (NC DENR) approved for the treated groundwater to be discharged from the air stripper directly to the infiltration gallery without treatment for metals. All four of the groundwater treatment systems became fully operational in February 1996. On March 19, 2004, the Lower Dockery extraction and treatment system was suspended with the approval of the US EPA and the NC DENR. Currently, the Macon Source Area, the Upper/Lower Macon and the Upper Dockery remediation systems are functioning and operating as designed.</p>			
<b>B. Adequacy of O&amp;M</b>			
<p>Describe issues and observations related to the implementation and scope of O&amp;M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy. Currently the O&amp;M is protective of human health and the environment in that direct contact with contaminated groundwater is prevented through the fact that groundwater extraction for potable use is prohibited. However the remedy is not protective in the long term because proper institutional controls in the form of permanent land use restrictions have not been developed and recorded and is therefore not enforceable upon subsequent landowners.</p>			

<b>C. Early Indicators of Potential Remedy Problems</b>
<p>Describe issues and observations such as unexpected changes in the cost or scope of O&amp;M or a high frequency of unscheduled repairs that suggest that the protectiveness of the remedy may be compromised in the future.</p> <p>Although costs have fluctuated due to unanticipated costs associated with O&amp;M, there is no indication that the protectiveness of the remedy is or will be compromised, as long as the institutional controls in the form of permanent land use restrictions are completely implemented.</p>
<b>D. Opportunities for Optimization</b>
<p>Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy. O&amp;M should continue into the future and should continue to evaluate opportunities for optimization in which the remedy may be completed in a shorter timeframe or at a lesser overall cost.</p>

Please note that "O&M" is referred to throughout this checklist. At sites where Long-Term Response Actions are in progress, O&M activities may be referred to as "system operations" since these sites are not considered to be in the O&M phase while being remediated under the Superfund program.

## **Photographs**









**APPENDIX C**  
**Public Notice and Interviews**



**THE U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA), REGION 4  
ANNOUNCES THE FOURTH FIVE-YEAR REVIEW OF THE CHARLES MACON  
LAGOON AND DRUM STORAGE SITE LOCATED IN CORDOVA, NORTH  
CAROLINA**

EPA is conducting a Five-Year Review of the remedy for the Charles Macon Lagoon and Drum Storage Site, also known as the Macon Dockery Site (Site). This Site is located off Old Cheraw Highway in Cordova, North Carolina. The purpose of the Five-Year Review is to make sure the selected cleanup actions continue to effectively protect human health and the environment.

The Charles Macon Lagoon and Drum Storage Site is comprised of two non-contiguous, independently owned parcels of land: a 40-acre tract owned by the Macon's and a one-acre tract owned by the Dockery's. The business operated from 1979 until 1982 as a waste oil recycling and antifreeze manufacturing facility located on State Road 1103 in Richmond County. Wastes from the processes were dumped into lagoons on the property as well as placed into 55-gallon drums. The Site was placed on the National Priorities List in July 1987. Clean-up of the soil has been completed. The groundwater treatment system continues to effectively remove volatile organic contaminants and has been operating since 1996.

EPA plans to complete the review in May 2015 and will place a copy of the final report in the information repository located at the Leath Memorial Library, 412 East Franklin Street, Rockingham, North Carolina, for the public to review.

Additional site information can be found online at:

<http://www.epa.gov/region4/superfund/sites/npl/northcarolina/chmaclgnc.html>

**CONTACT INFORMATION:**

**Giezelle Bennett, EPA Remedial Project Manager [bennett.giezelle@epa.gov](mailto:bennett.giezelle@epa.gov) or  
Angela Miller, EPA Community Involvement Coordinator  
[miller.angela@epa.gov](mailto:miller.angela@epa.gov). You may also call toll free (877) 718-3752.**

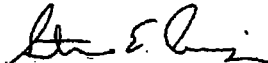
**APPENDIX D**  
**Annual Summary Status Report**  
**June 2013 - June 2014**

**MACON/DOCKERY SITE  
CORDOVA, RICHMOND COUNTY  
NORTH CAROLINA  
ANNUAL SUMMARY STATUS REPORT  
JUNE 1, 2013 TO JUNE 1, 2014**

**Prepared for:**  
The Macon/Dockery Site Group

**Prepared By:**  
Irminger Consulting, Inc.  
7015 Erinbrook Drive  
Concord, North Carolina 28025

**September 26, 2014**  
*IC PROJECT NO.: 0004-001*

  
Steven E. Irminger, P.E.  
Project Manager

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**MACON/DOCKERY SITE  
CORDOVA, RICHMOND COUNTY, NORTH CAROLINA  
ANNUAL STATUS REPORT  
JUNE 1, 2013 TO JUNE 1, 2014**

**1.0 Introduction**

The following document is the 2013/2014 annual status report for the Macon/Dockery Superfund project in Cordova, Richmond County, North Carolina. This report satisfies the requirement for an annual summary status report set forth in the Unilateral Administrative Order For Remedial Design and Remedial Action, Section XV Part D, dated June 18, 1992.

For site history and background information the reader is referred to the Remedial Investigation / Feasibility Study (RI/FS) completed in 1991. Since start-up, several modifications to the operation and maintenance requirements have been approved by the EPA and North Carolina Department of Environment and Natural Resources (DENR). These modifications have included reduction of the sample analytical frequency and parameters as well as the suspension of the soil vapor extraction system, and Lower Dockery and Lower Macon groundwater extraction systems. These modifications are summarized in the three Five Year Status Review Reports prepared by EPA and DENR dated September 2000, September 2005, and April 2010.



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## **2.0 System Performance Review**

The remedial systems started operation during the week of February 12, 1996. The following sections summarize performance data for the remedial systems, and operational difficulties encountered during the reporting period (June 1, 2013 to June 1, 2014).

### **2.1 Flow Rates and Totals**

System flow total data are recorded on a weekly basis from the remedial systems. Monthly flow rates and totals for each groundwater system are summarized in **Table 1**. For the reporting period June 1, 2013 to June 1, 2014 the system flow totals are as follows:

- Upper Dockery            4,187,183 gallons
- Lower Dockery            0 gallons (System Suspended)
- Macon Source Area        1,998,381 gallons
- Upper Macon              8,401,274 gallons
- Lower Macon              0 gallons (System Suspended)

### **2.2 Percent Operational**

System downtime is recorded on a daily basis and summarized on the monthly progress reports. A summary of the operational time, expressed as a percent of the total time, is contained in **Table 2**. The following is the average percent each area operated during the reporting period of June 1, 2013 to June 1, 2014:

- Upper Dockery            95 percent

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- Lower Dockery 0 percent (Lower Dockery System suspended on 3-19-04)
- Macon Source Area 86 percent
- Upper Macon 88 percent
- Lower Macon 0 percent (Lower Macon System suspended on 5-20-2010)
- SVE System 0 percent (SVE System suspended July 2001)

### **2.3 Operational Difficulties Encountered and Corrective Actions**

Several difficulties were encountered during the reporting period that affected the operation of the remedial systems at the Macon/Dockery site. The following sections describe the difficulties encountered system-wide and at individual sites.

#### **2.3.1 General Operational Difficulties**

The following general operational difficulties were experienced during the reporting period:

- 1/21/2014 – 1/28/2014: The Macon Source and Upper Macon remediation system were down upon arrival because of a high sump alarm caused by frozen effluent lines. The insulation and heat trace line was repositioned and both systems were restarted on 1/28/2014.
- 4/12/2014 – 4/19/2014: The Upper Dockery, Macon Source, and Upper Macon remediation systems were down upon arrival because of tripped line breakers. Pee Dee Electric reset the breakers and the systems were restarted on 4/19/2014.
- 5/19/2014 – 5/25/2014: The Macon Source and Upper Macon remediation

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systems were down upon arrival because of a tripped line breaker. Pee Dee Electric reset the breaker and the systems were restarted on 5/25/2014.

The Lower Macon, Lower Dockery, and SVE systems have been suspended.

### **2.3.2 Operational Difficulties at Individual Sites**

The following section briefly summarizes difficulties and their corrective actions taken at individual Macon/Dockery remedial systems.

#### Upper Dockery

- 8/5/2013 – 8/7/2013: The Upper Dockery remediation system was down upon arrival because of a tripped breaker to the blower. The breaker was reset and the system restarted on 8/7/2013.
- 10/29/2013 – 10/31/2013: The Upper Dockery remediation system was down upon arrival because of a tripped breaker to the blower. The breaker was reset and the system restarted on 10/31/2013.
- 3/16/2014 – 3/25/2014: The Upper Dockery remediation system was turned off because of a malfunctioning fan motor. The motor was repaired and the system restarted on 3/25/2014.
- 4/12/2014 – 4/19/2014: The Upper Dockery remediation system was down upon arrival because of a tripped line breaker. Pee Dee Electric reset the breaker and the system was restarted on 4/19/2014.

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Lower Dockery

- System suspended.

Macon Source Area

- 6/18/2013 – 7/16/2013: The Macon Source remediation system was down upon arrival because of a malfunctioning blower motor. The blower and motor were removed. A new blower was ordered and attached to the blower. On July 16, 2013, the blower and motor were installed and the system restarted.
- 9/17/2013-9/19/2013: The Macon Source remediation system was down upon arrival because of a low pressure alarm. The blower intake screen was cleaned and the system restarted on September 19, 2013.
- 12/13/2013 – 12/15/2013: The Macon Source remediation system was down upon arrival because of a tripped main breaker. The breaker was reset and the system restarted on 12/15/2013.
- 1/21/2014 – 1/28/2014: The Macon Source remediation system was down upon arrival because of a high sump alarm caused by a frozen effluent line. The insulation and heat trace line was repositioned and the system was restarted on 1/28/2014.
- 4/12/2014 – 4/19/2014: The Macon Source remediation system was down upon arrival because of a tripped line breaker. Pee Dee Electric reset the breaker and the system was restarted on 4/19/2014.

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- 5/19/2014 – 5/25/2014: The Macon Source remediation system was down upon arrival because of a tripped line breaker. Pee Dee Electric reset the breaker and the system was restarted on 5/25/2014.

Upper Macon

- 6/10/2013-6/25/2013: The Upper Macon remediation system was off upon arrival because of a tripped circuit breaker on the blower. The water system tank was found to be empty. The system tank was filled and the system was restarted on 6/25/2013.
- 8/8/2013 – 8/12/2013: The Upper Macon remediation system was turned off to repair a leaking influent pipe. The pipe was repaired on 8/10/2013 and the system was restarted on 8/12/2013.
- 11/15/2013-11/17/2013: The Upper Macon remediation system was off upon arrival because of a high-level alarm in the sump. The flow meter was cleaned and the system was restarted on 11/17/2013.
- 1/21/2014 – 1/28/2014: The Upper Macon remediation system was down upon arrival because of a high sump alarm caused by a frozen effluent line. The insulation and heat trace line was repositioned and the system was restarted on 1/28/2014.

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- 4/12/2014 – 4/19/2014: The Upper Macon remediation system was down upon arrival because of a tripped line breaker. Pee Dee Electric reset the breaker and the system was restarted on 4/19/2014.
- 5/1/2014 – 5/3/2014: The Upper Macon remediation system was turned off 5/1/2014 because of a damaged shear element. A new shear element was installed on 5/3/2014 and the system restarted.
- 5/19/2014 – 5/25/2014: The Upper Macon remediation system was down upon arrival because of a tripped line breaker. Pee Dee Electric reset the breaker and the system was restarted on 5/25/2014.

#### **2.4 System Modifications**

No system modifications were proposed or implemented during the reporting period.

#### **2.5 Effluent Concentrations**

A measure of the system performance can be made based on the system's ability to reduce influent concentrations to remedial performance standards. Because system effluent is directed to an infiltration gallery, effluent concentrations are designed to be no greater than the remediation goals established for groundwater at the site. The analytical results of effluent water samples collected from the remedial systems are summarized in **Tables 3 through 6**.

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**2.5.1 Inorganic Parameter Exceedances**

During the reporting period, the effluent sample inorganic analytical results have been below the performance standard concentrations.

**2.5.2 VOC Exceedances**

Based on the analytical reports of samples collected from the system effluent ports, there have been no exceedances of VOC's in system effluent during the reporting period.

**2.6 Influent Concentrations**

Water samples were collected from the influent ports of the remedial systems on a semi-annual basis. A summary of the influent sample analytical results is included in Tables 7 through 10.

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### **3.0 System Effectiveness**

System effectiveness at reducing contaminant concentrations at the site is indicated by periodic groundwater elevation measurements and groundwater and air samples. The sampling frequency and analytical parameters were conducted as stipulated in the recommendations of the Year 2000, 2005, and 2010, Five Year Review Reports prepared by the USEPA Region IV office. Groundwater elevation measurements and groundwater samples were collected from the monitoring wells in August 2014. Remediation system influent samples were collected on a semi-annual basis during the reporting period. Air samples collected from the air exhaust stacks of the groundwater remediation systems and the ambient air at the property line and remediation system effluent water samples were collected annually during the reporting period.

A summary of the groundwater level measurements and calculated groundwater elevations is included in **Table 11**. A summary of the analytical results reported for the groundwater samples collected from the monitoring wells is included in **Table 12**. Monitoring well MW-23 could not be located on August 14, 2014, because of dense vegetation. Groundwater from monitoring well MW-23 will be sampled in the winter and the results submitted under separate cover. Air analytical results from the air exhaust stacks of the remedial systems and ambient site air are summarized in **Table 13**.

Mass removal estimates are calculated for each of the remedial systems on a quarterly basis. The estimates are based on quarterly flow volume and semi-annual influent concentration data. A



*Fourth Five-Year Review  
Charles Macon Lagoon and Drum Storage  
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summary of the mass removal estimates for the remedial systems is included in **Table 14**. Based on the mass removal estimates, the remediation systems at the Macon/Dockery site are effectively remediating the subsurface target parameters.

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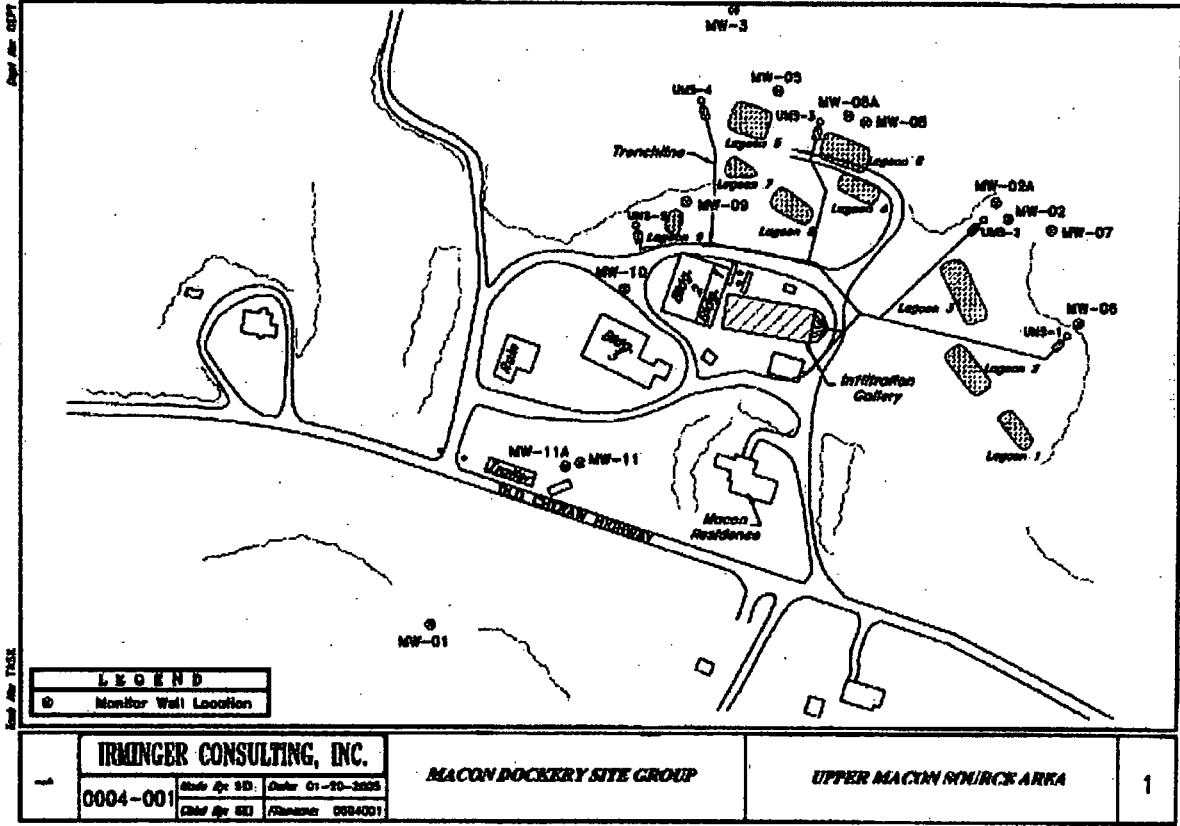
#### **4.0 Schedule**

The following details the proposed schedule for the Macon/Dockery site tasks:

- A sample schedule is provided on **Table 15**. The sample is based on the recommendations of the Year 2000, 2005, and 2010 Five Year Review Reports prepared by the USEPA Region IV office and the DENR;
- The approved operation and maintenance (O&M) program will continue to include weekly site visits;
- Progress status reporting will continue to be submitted to the EPA each quarter;
- The next annual summary status report will summarize the period June 1, 2014 to June 1, 2015.

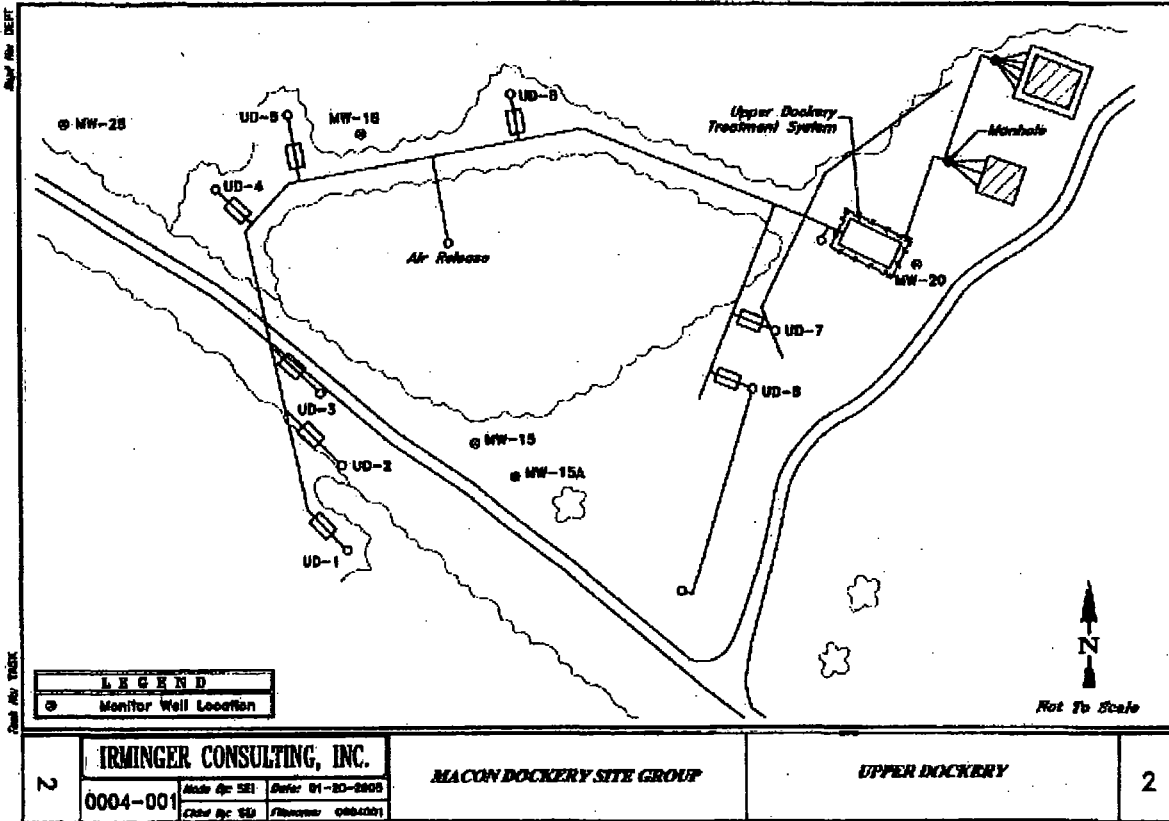
**FIGURES**

D-16



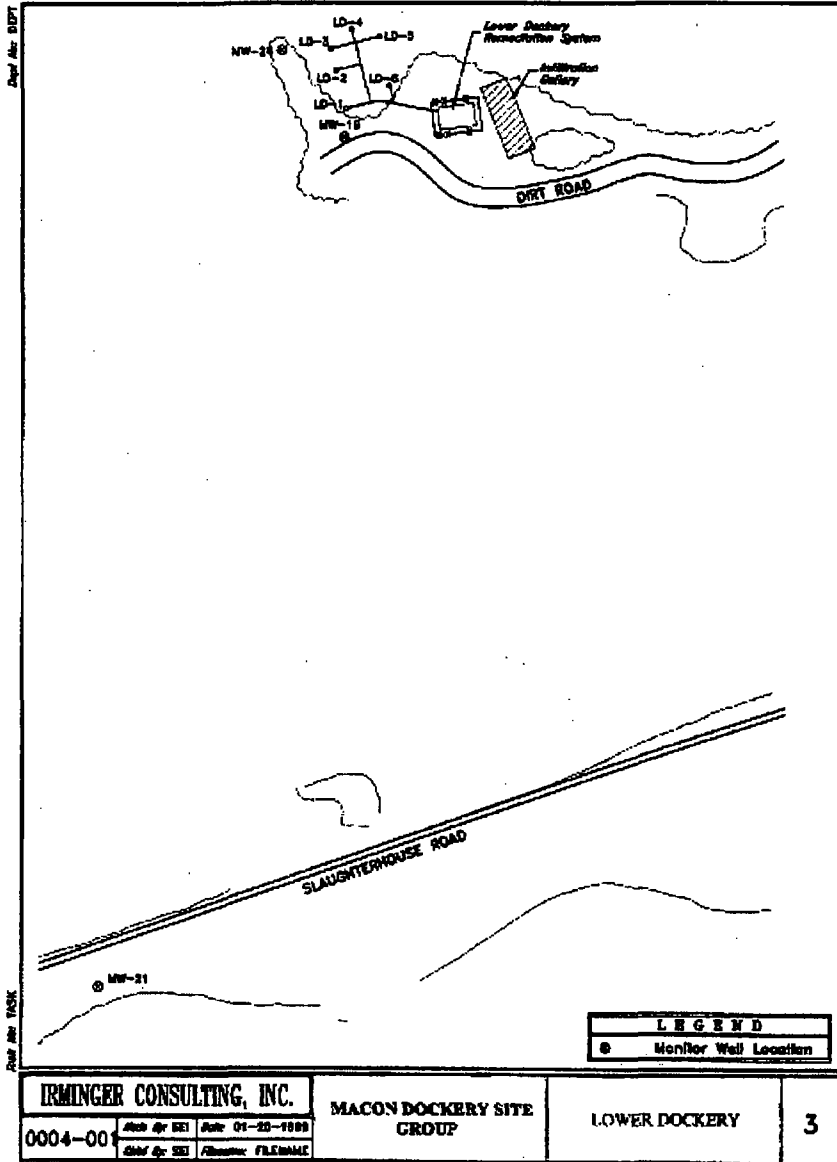
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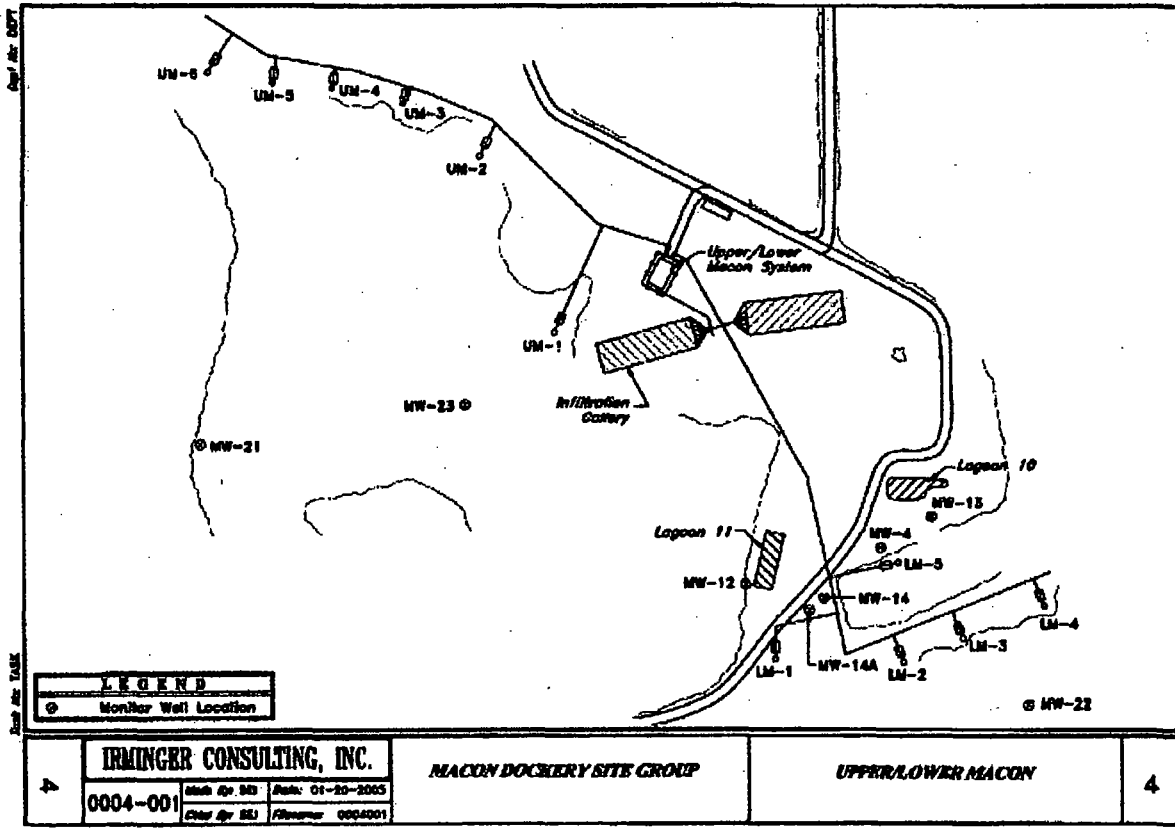
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IRMINGER CONSULTING, INC.		MACON DOCKERY SITE GROUP	LOWER DOCKERY	3
0004-00	Date: 01-23-1989 Date: 01-23-1989 Date: 01-23-1989			

D-19



<b>LEGEND</b>				
⊙	Monitor Well Location			
4	<b>IRMINGER CONSULTING, INC.</b>	<b>MACON DOCKERY SITE GROUP</b>	<b>UPPER/LOWER MACON</b>	4
0004-001	Scale: 1" = 50'	Date: 01-20-2005		
	Drawn by: ESI	Reviewed: 0004001		

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Charles Macon Lagoon and Drum Storage  
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**TABLES**



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Charles Macon Lagoon and Drum Storage  
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**TABLE 1  
SUMMARY OF GROUNDWATER FLOW TOTALS  
MACON/DOCKERY SITE Page 1 of 5**

Date	Upper Dockery			Lower Dockery			Macon Source Area			Upper/Lower Macon		
	Monthly Flow (gallons)	Total Flow (gallons)	Monthly Average Flow Rate (gallons per minute)	Monthly Flow (gallons)	Total Flow (gallons)	Monthly Average Flow Rate (gallons per minute)	Monthly Flow (gallons)	Total Flow (gallons)	Monthly Average Flow Rate (gallons per minute)	Monthly Flow (gallons)	Total Flow (gallons)	Monthly Average Flow Rate (gallons per minute)
Mar-07	400,199	400,199	0.3	328,448	328,448	7.0	424,063	424,063	9.9	375,319	375,319	8.7
Apr-07	288,151	898,350	6.6	191,083	819,838	4.4	364,772	780,856	8.4	709,728	1,086,044	16.4
May-07	88,829	783,182	1.5	246,716	706,253	8.7	287,720	1,848,576	8.0	482,228	1,887,284	11.2
Jun-07	97,390	860,482	2.3	8,819	773,872	0.2	114,048	1,162,823	2.8	48,305	1,816,589	1.1
Jul-07	183,428	1,013,909	3.8	151,837	928,969	3.5	202,477	1,388,180	4.7	759,820	2,376,489	17.8
Aug-07	218,530	1,232,238	5.1	136,232	1,051,821	2.9	207,853	1,572,803	4.8	638,400	3,013,999	14.8
Sep-07	149,420	1,381,858	3.5	83,533	1,116,784	1.6	208,649	1,782,262	4.9	302,505	3,318,304	7.0
Oct-07	140,191	1,521,849	3.2	480,379	1,578,143	10.7	101,512	1,883,784	2.3	840,780	3,967,164	14.6
Nov-07	438,013	1,959,862	10.1	183,210	1,759,863	4.2	118,354	2,000,118	7.7	871,150	4,828,308	20.2
Dec-07	161,903	2,121,765	3.7	137,884	1,888,947	3.2	137,045	2,137,183	3.2	728,648	5,553,958	16.8
Jan-07	294,071	2,416,836	6.8	288,302	2,183,149	6.8	146,035	2,389,188	3.4	886,131	6,149,998	13.8
Feb-07	267,988	2,843,432	6.2	80,912	2,274,061	2.1	215,730	2,499,829	5.0	785,238	6,943,238	16.4
Mar-07	250,088	3,823,520	5.8	377,422	2,551,859	6.4	223,222	2,722,161	6.2	689,710	7,884,936	21.8
Apr-07	278,858	3,210,038	6.4	180,580	2,752,444	4.2	883,197	2,978,318	6.9	918,080	8,803,018	21.3
May-07	288,838	3,489,884	6.7	684,850	3,417,299	16.8	223,177	3,108,495	6.2	909,040	8,902,058	23.1
Jun-07	130,576	3,626,369	3.1	901,987	3,918,286	11.8	234,888	3,433,184	8.4	805,792	10,497,840	14.0
Jul-07	908,990	3,735,465	2.3	581,627	4,553,313	13.4	117,736	3,880,800	2.7	2,238,658	10,851,706	8.2
Aug-07	708,671	3,808,432	1.8	414,197	4,954,612	6.6	62,942	3,601,146	1.2	811,878	11,643,388	21.0
Sep-07	622,300	3,889,828	1.2	481,048	6,386,561	11.1	382,84	3,637,412	0.8	917,831	12,481,819	21.2
Oct-07	277,905	4,136,193	0.4	467,804	6,883,186	10.6	70,207	3,707,819	1.8	821,335	13,282,154	19.0
Nov-07	143,186	4,278,381	5.3	308,683	8,161,848	7.1	102,338	3,809,845	2.4	1,407,38	13,432,860	3.3
Dec-07	783,32	4,357,780	1.5	272,778	8,433,727	6.3	114,602	3,924,397	2.8	844,298	14,287,348	16.5
Jan-08	163,888	4,481,881	2.4	788,548	7,220,276	18.2	178,387	4,102,784	4.1	531,882	14,788,941	12.3
Feb-08	288,688	4,768,348	6.9	1,280,12	7,343,288	2.8	178,387	4,281,171	4.1	1,051,802	16,848,843	24.3
Mar-08	388,625	5,084,734	7.6	287,827	7,653,115	8.5	145,628	4,426,397	3.4	832,898	18,782,388	21.8
Apr-08	418,476	5,504,348	9.7	462,536	8,082,860	10.5	800,795	5,026,172	13.9	882,272	17,444,481	15.3
May-08	440,440	5,944,838	10.2	141,938	8,224,786	3.3	41,880	5,437,877	9.5	878,645	18,321,428	20.3
Jun-08	200,182	6,144,887	4.6	453,114	8,577,800	10.8	431,380	5,889,037	10.0	4,486,658	18,789,482	18.4
Jul-08	870,448	6,481,336	7.8	694,880	9,162,980	11.7	388,833	6,198,472	7.8	778,195	19,545,877	18.0
Aug-08	432,718	6,914,854	10.0	453,131	9,636,791	10.5	473,283	6,671,885	11.0	667,182	20,402,708	18.8
Sep-08	411,877	7,338,331	9.6	581,481	10,227,272	13.7	913,888	7,186,833	11.9	821,438	21,224,228	19.6
Oct-08	439,978	7,768,708	10.2	471,728	10,699,001	10.9	483,848	7,878,882	11.4	718,648	21,942,788	18.8
Nov-08	362,895	8,128,288	8.4	642,218	11,341,214	14.9	488,878	8,178,363	11.8	2,811,41	22,188,807	8.8
Dec-08	504,680	8,628,748	11.8	415,680	11,758,784	9.8	371,894	8,588,178	8.8	713,232	22,327,138	18.5
Jan-08	887,780	9,181,541	12.8	381,051	12,117,819	6.4	337,877	8,888,053	7.8	832,208	23,742,348	19.3
Feb-08	524,380	9,706,821	12.1	822,107	12,839,828	12.1	384,134	9,272,177	8.9	5,886,78	24,338,834	13.8
Mar-08	614,841	10,320,762	14.2	622,194	13,382,116	14.4	539,825	9,812,100	13.8	1,038,882	25,384,817	24.0
Apr-08	871,148	10,861,910	13.2	704,282	13,988,408	18.3	431,729	10,343,831	10.0	894,783	26,289,880	20.7
May-08	824,348	11,418,258	12.1	881,888	14,548,888	13.5	384,421	10,832,274	9.0	828,648	27,087,228	19.2
Jun-08	431,742	11,848,001	10.0	427,808	14,978,001	9.9	409,895	11,841,340	8.5	809,334	27,888,882	18.7
Jul-08	382,518	12,340,218	8.1	473,880	15,448,988	11.0	302,412	11,843,783	11.8	882,110	28,479,878	13.8
Aug-08	180,407	12,430,828	4.4	228,894	16,678,827	6.2	228,894	11,772,578	5.3	636,228	29,114,288	14.7
Sep-08	303,810	12,734,838	7.0	469,203	16,135,830	10.8	820,216	12,682,781	18.0	788,831	29,883,100	17.8
Oct-08	384,213	13,089,048	8.4	891,217	16,727,147	13.7	530,478	13,123,289	12.3	894,738	30,777,886	20.7
Nov-08	227,050	13,378,104	8.4	488,592	17,181,840	10.8	390,353	13,513,222	9.0	846,400	31,484,270	16.0
Dec-08	388,943	13,788,047	8.0	447,851	17,638,000	10.4	643,646	14,057,187	12.6	576,397	31,998,887	13.3
Jan-09	228,730	14,022,780	6.5	860,530	18,143,120	11.7	170,318	14,227,483	3.9	281,858	32,291,228	8.1
Feb-09	0	14,022,780	0.0	88,187	18,238,287	2.2	287,840	14,588,323	8.3	181,188	32,422,481	3.7
Mar-09	178,828	14,178,338	4.1	236,858	18,473,443	8.6	338,782	14,821,100	7.8	308,882	32,731,433	7.2

Note: Monthly average based on 30-day months

Fourth Five-Year Review  
Charles Macon Lagoon and Drum Storage  
Cordova, Richmond County, NC

**TABLE 1  
SUMMARY OF GROUNDWATER FLOW TOTALS  
MACON DOCKERY SITE Page 2 of 5**

Date	Upper Dockery			Lower Dockery			Mason Branch Area			Upper/Lower Macon		
	Monthly Flow (gallons)	Total Flow (gallons)	Monthly Average (gallons per minute)	Monthly Flow (gallons)	Total Flow (gallons)	Monthly Average (gallons per minute)	Monthly Flow (gallons)	Total Flow (gallons)	Monthly Average (gallons per minute)	Monthly Flow (gallons)	Total Flow (gallons)	Monthly Average (gallons per minute)
Apr-02	184,814	14,344,323	3.8	212,338	18,856,181	4.9	351,270	15,233,376	7.7	418,389	33,147,822	8.8
May-02	416,400	14,783,703	9.7	483,798	19,171,870	11.2	191,212	15,603,587	3.5	127,297	33,278,339	3.6
Jun-02	104,898	14,886,351	2.4	382,897	18,994,987	8.9	300,123	13,702,710	8.9	857,891	33,883,380	14.1
Jul-02	80,000	14,948,381	1.8	600,846	20,068,816	11.8	231,991	13,936,701	6.4	425,891	34,309,941	9.9
Aug-02	133,678	15,091,938	3.1	294,722	20,340,538	6.8	188,494	16,122,195	4.3	380,931	34,689,972	8.8
Sep-02	128,286	15,211,148	3.0	387,833	20,928,171	10.8	84,780	16,269,978	2.0	818,130	35,028,111	21.3
Oct-02	148,424	15,359,548	3.4	512,427	21,440,586	11.9	180,071	18,387,040	4.2	242,960	35,822,101	6.8
Nov-02	618,781	15,875,307	14.3	789,820	22,210,524	17.8	628,034	16,813,070	12.2	200,334	36,052,466	4.8
Dec-02	529,427	16,201,734	12.2	129,968	22,338,913	2.9	291,890	17,174,930	6.1	148,019	36,197,474	3.4
Jan-03	188,361	16,858,095	3.8	203,758	22,540,271	4.7	83,074	17,228,304	1.8	129,442	36,328,868	3.0
Feb-03	144,178	16,882,374	3.2	637	22,540,908	0.01	214	17,228,218	0.01	248,730	36,598,680	6.1
Mar-03	28,462	16,828,788	0.6	63,534	22,624,442	1.8	48,285	17,276,813	1.1	273,004	36,988,280	6.1
Apr-03	48,380	16,874,149	1.1	0	22,824,442	0.0	47,800	17,324,613	1.1	1,148,868	36,118,128	28.8
May-03	334,413	17,185,568	7.3	85,880	22,720,332	2.1	81,238	17,405,551	1.8	425,284	36,943,479	16.5
Jun-03	249,287	17,447,826	6.6	754	22,721,056	0.02	48,228	17,480,788	1.1	1,263,471	40,208,950	29.3
Jul-03	130,840	17,678,480	2.8	891	22,722,007	0.02	42,880	17,480,870	1.0	1,713,972	41,928,922	28.4
Aug-03	91,030	17,898,498	2.0	0	22,722,007	0.0	22,838	17,516,608	0.5	2,248,318	44,176,238	60.3
Sep-03	78,860	17,746,486	1.9	22,760	22,744,746	0.6	38,918	17,586,134	1.0	2,488,338	45,668,568	82.0
Oct-03	108,448	17,854,904	2.4	183,228	22,849,934	2.4	20,886	17,577,112	0.6	1,818,814	48,287,382	38.3
Nov-03	80,434	17,816,338	1.4	503	22,850,887	0.01	27,720	17,804,332	0.8	3,549,878	51,837,281	62.1
Dec-03	0	17,816,338	0.0	89,798	22,851,353	1.8	30,537	17,835,268	0.7	780,840	52,627,901	18.8
Jan-04	41,782	17,937,071	1.0	821,884	23,382,287	7.8	83,880	17,860,350	1.6	389,881	52,987,782	8.8
Feb-04	37,189	17,994,260	0.8	71,807	23,328,054	1.7	83,126	17,782,488	1.2	180,283	53,138,027	4.3
Mar-04	19,730	18,013,980	0.4	138	23,328,180	0.0	86,000	17,841,484	2.1	116,080	53,253,887	2.7
Apr-04	44,413	18,036,403	1.0	177,937	23,442,917	2.7	74,000	17,815,884	1.7	468,200	53,788,287	10.6
May-04	37,987	18,088,000	0.8	42,940	23,485,688	1.0	89,381	18,014,886	2.3	2,880	53,716,887	0.1
Jun-04	28,388	18,122,388	0.6	0	23,485,688	0.0	18,821	18,033,488	0.4	128,348	53,831,213	2.8
Jul-04	2,887	18,126,388	0.1	0	23,485,688	0.0	5,340	18,038,828	0.1	147	53,831,380	0.0
Aug-04	3,849	18,129,216	0.1	7,031	23,482,487	0.2	83,448	18,094,271	1.3	0	53,831,380	0.0
Sep-04	84,823	18,183,036	1.6	871	23,483,184	0.0	12,188	18,106,470	0.3	12,378	53,843,736	0.3
Oct-04	48,883	18,242,488	1.1	38,708	23,531,934	0.9	27,918	18,134,388	0.8	1,282,418	55,128,152	29.7
Nov-04	14,800	18,257,088	0.3	473,838	24,008,782	11.0	88,397	18,182,732	1.4	1,280,820	56,478,772	28.9
Dec-04	23,788	18,260,847	0.5	443,872	24,448,434	10.3	4,108	18,198,838	0.1	410,303	56,787,075	6.5
Jan-05	unknown	unknown	unknown	232,052	24,887,916	6.0	8,807	18,206,438	0.2	28,782	57,041,857	6.3
Feb-05	unknown	unknown	unknown	388,221	25,017,737	7.3	12,820	18,217,486	0.2	351,870	57,353,827	8.1
Mar-05	unknown	unknown	unknown	unknown	unknown	unknown	2,348	18,219,802	0.1	123,248	57,517,080	3.2
Apr-05	unknown	unknown	unknown	488,977	25,514,714	10.2	18,700	18,236,802	0.3	820	57,617,818	0.0
May-05	188,180	18,697,048	4.2	488,884	25,923,433	9.5	49,700	18,286,208	1.2	368,977	57,874,382	8.3
Jun-05	208,823	18,867,908	6.4	250,082	26,173,482	8.7	286,800	18,542,800	7.8	421,880	58,298,172	11.3
Jul-05	208,728	18,874,838	4.1	128,180	26,288,842	2.8	420,100	18,682,100	8.3	978,180	60,288,352	19.3
Aug-05	273,808	19,148,244	6.1	283,890	26,583,032	8.3	348,000	19,348,108	7.8	881,288	60,248,800	22.0
Sep-05	228,088	19,378,513	6.1	378,808	26,982,840	8.6	339,487	19,577,372	7.4	1,395,884	61,648,284	21.3
Oct-05	188,044	19,695,367	4.2	154,884	27,117,704	3.5	283,402	19,970,974	6.8	1,378,334	63,023,588	30.9
Nov-05	188,482	19,731,818	4.0	System	System	Suspended	228,282	20,197,288	6.4	1,287,037	64,288,648	30.3
Dec-05	121,844	19,883,383	2.8	System	System	Suspended	248,238	20,446,482	5.2	1,380,373	65,571,918	28.9
Jan-06	218,848	20,082,812	6.1	System	System	Suspended	228,881	20,682,482	5.6	287,078	65,833,082	8.2
Feb-06	188,888	20,271,587	4.2	System	System	Suspended	431,803	21,114,288	9.7	60,331	66,888,418	1.4

Note: Monthly average based on 30-day months  
unknown - Flow unknown due to malfunctioning flow meter

Fourth Five-Year Review  
Charles Macon Lagoon and Drum Storage  
Cordova, Richmond County, NC

TABLE 1  
SUMMARY OF GROUNDWATER FLOW TOTALS  
MACON/DOCKERY SITE Page 3 of 5

Date	Upper Dockery			Lower Dockery			Macon Source Area			Upper/Lower Macon		
	Monthly Flow (gallons)	Total Flow (gallons)	Monthly Average (gallons per minute)	Monthly Flow (gallons)	Total Flow (gallons)	Monthly Average (gallons per minute)	Monthly Flow (gallons)	Total Flow (gallons)	Monthly Average (gallons per minute)	Monthly Flow (gallons)	Total Flow (gallons)	Monthly Average (gallons per minute)
Aug-04	189,190	20,450,750	4.2	Suspended	478,053	21,862,319	10.7	503,444	68,233,883	6.8		
Sep-04	201,757	20,892,513	4.7	System	96,723	21,843,042	1.2	1,198,758	87,400,618	27.7		
Oct-04	282,806	25,825,322	6.8	System	470,818	22,113,280	10.5	1,144,391	86,547,090	26.7		
Nov-04	308,118	21,233,441	7.1	System	200,654	22,314,224	4.8	732,088	69,279,078	18.9		
Dec-04	277,228	21,511,387	6.2	System	284,182	22,578,387	5.9	1,213,190	70,482,258	27.2		
Jan-05	290,823	21,782,190	5.8	System	204,846	22,783,332	4.6	626,256	70,056,613	9.8		
Feb-05	278,778	22,041,958	6.0	System	133,816	22,917,147	3.3	1,484,210	72,424,723	37.1		
Mar-05	254,888	22,298,834	5.7	System	118,580	23,036,007	2.7	1,432,055	73,868,778	32.1		
Apr-05	418,288	22,715,042	9.7	System	186,810	23,202,117	3.8	1,841,855	78,488,733	38.0		
May-05	450,883	23,186,727	10.1	System	370,030	23,872,147	8.3	1,475,818	78,874,681	33.1		
Jun-05	168,297	22,334,316	2.9	System	269,099	23,837,162	8.8	723,010	77,997,581	19.7		
Jul-05	78,323	23,410,551	1.7	System	286,313	24,122,465	6.0	1,608,298	78,328,800	33.8		
Aug-05	180,783	23,801,384	4.3	System	144,887	24,287,322	3.2	889,920	78,875,778	15.0		
Sep-05	116,521	23,718,900	2.8	System	209,190	24,476,022	4.7	740,105	80,815,581	18.8		
Oct-05	187,546	23,887,451	4.0	System	90,329	24,888,830	2.0	828,982	81,154,841	12.1		
Nov-05	162,828	24,088,996	3.8	System	287,022	24,833,882	6.2	1,343,800	82,368,841	28.8		
Dec-05	444,839	24,504,921	10.0	System	348,818	24,833,882	7.8	1,301,230	83,889,871	29.1		
Jan-06	445,572	24,950,483	10.0	System	290,830	25,474,302	6.6	1,322,890	85,052,781	28.2		
Feb-06	484,462	25,414,951	11.8	System	351,378	25,929,877	8.7	1,421,880	86,434,841	35.3		
Mar-06	823,700	26,838,741	15.7	System	271,815	26,097,692	8.1	1,881,870	88,108,511	37.7		
Apr-06	439,800	28,378,341	10.2	System	281,704	28,379,322	6.5	736,170	88,841,881	17.0		
May-06	387,283	28,775,894	8.8	System	178,892	28,958,378	4.0	900,898	89,742,880	20.2		
Jun-06	304,881	27,130,815	7.0	System	186,102	28,742,477	3.7	555,005	89,298,666	11.9		
Jul-06	78,850	27,307,495	2.0	System	126,386	28,887,842	3.2	512,880	90,808,295	11.1		
Aug-06	503,218	27,710,713	15.0	System	116,448	28,883,287	3.6	714,880	91,523,225	28.2		
Sep-06	549,920	28,280,853	9.1	System	387,898	27,371,383	6.4	1,456,870	92,979,088	24.1		
Oct-06	373,813	28,634,946	8.9	System	288,728	27,840,311	6.8	1,430,300	93,469,290	34.3		
Nov-06	471,382	28,106,988	11.7	System	278,282	27,816,374	6.9	1,128,998	93,838,304	28.0		
Dec-06	827,782	29,733,380	12.8	System	348,848	28,286,019	7.1	1,871,878	97,110,880	32.1		
Jan-07	501,198	30,224,458	12.4	System	323,040	28,518,659	6.3	1,322,048	98,433,328	32.8		
Feb-07	509,228	30,860,887	13.8	System	348,484	28,787,563	6.0	1,482,818	98,888,247	35.0		
Mar-07	700,178	31,603,873	14.3	System	328,231	28,683,804	6.7	1,782,108	101,868,268	38.0		
Apr-07	883,224	32,087,187	14.0	System	317,833	28,411,837	7.6	1,828,181	103,188,518	38.8		
May-07	843,813	32,830,810	13.8	System	269,892	29,721,822	7.7	1,488,284	104,882,810	35.4		
Jun-07	688,808	33,222,818	11.8	System	331,872	30,553,474	6.8	1,139,888	105,773,788	22.2		
Jul-07	489,345	33,712,983	12.1	System	198,822	30,232,287	4.9	869,394	106,843,882	21.8		
Aug-07	478,888	34,188,822	8.5	System	318,772	30,572,189	6.3	1,141,835	107,784,892	22.7		
Sep-07	198,282	34,328,112	3.4	System	132,845	30,704,814	3.3	615,285	108,380,290	12.8		
Oct-07	488,872	34,812,784	12.1	System	251,200	30,868,014	6.2	823,077	108,123,887	26.4		
Nov-07	688,144	35,412,828	13.8	System	310,829	31,288,843	6.2	85,147	108,178,514	1.0		
Dec-07	475,516	35,888,443	11.0	System	247,428	31,814,272	6.1	897,187	108,775,711	14.4		
Jan-08	981,822	36,480,049	13.7	System	208,491	31,722,782	4.8	1,308,787	111,285,488	28.0		
Feb-08	638,822	37,018,987	12.8	System	480,226	32,102,809	6.8	728,833	111,812,032	16.8		
Mar-08	388,147	37,388,107	8.8	System	283,323	32,388,353	6.1	1,401,884	113,213,727	22.4		
Apr-08	481,828	37,847,032	10.7	System	270,838	32,837,188	6.3	1,108,231	114,280,068	28.8		
May-08	615,287	38,482,238	14.2	System	341,872	32,878,803	7.9	1,540,338	115,880,594	35.7		
Jun-08	491,888	38,983,322	11.4	System	247,878	33,228,840	6.7	1,288,587	117,187,181	30.0		
Jul-08	468,889	38,419,984	10.8	System	254,286	33,461,106	5.9	1,222,829	118,379,710	28.3		
Aug-08	84,288	38,504,252	2.0	System	137,892	33,819,007	3.2	589,848	118,843,888	13.1		
Sep-08	428,888	38,823,492	8.8	System	382,837	33,821,864	7.9	1,185,878	120,079,287	28.3		
Oct-08	377,418	40,318,808	8.7	System	188,143	34,088,788	3.9	855,864	120,835,091	19.8		
Nov-08	518,124	40,827,032	11.8	System	287,313	34,387,101	6.2	47,428	120,882,817	1.1		
Dec-08	410,089	41,227,121	8.5	System	279,004	34,832,105	6.4	882,084	121,884,881	22.7		
Jan-09	148,818	41,287,880	3.5	System	148,915	34,778,014	3.4	885,826	122,851,408	13.1		
Feb-09	828,182	42,013,250	14.9	System	274,443	35,032,487	6.4	1,609,211	124,140,817	37.3		

Note: Monthly average based on 30-day month.

Fourth Five-Year Review  
 Charles Macon Lagoon and Drum Storage  
 Cordova, Richmond County, NC

TABLE 1  
 SUMMARY OF GROUNDWATER FLOW TOTALS  
 MACONDOCKERY SITE Page 4 of 5

Date	Upper Dockery			Lower Dockery			Bacon Source Area			Upper/Lower Macon			
	Monthly Flow (gallons)	Total Flow (gallons)	Monthly Average (gallons per minute)	Monthly Flow (gallons)	Total Flow (gallons)	Monthly Average (gallons per minute)	Monthly Flow (gallons)	Total Flow (gallons)	Monthly Average (gallons per minute)	Monthly Flow (gallons)	Total Flow (gallons)	Monthly Average (gallons per minute)	
Mar-06	437,800	42,451,000	10.1	System			Suspended	100,437	35,152,330	2.3	622,075	139,763,532	14.4
Apr-06	242,840	42,280,800	6.8	System			Suspended	174,875	35,327,488	4.0	629,895	126,992,327	21.0
May-06	443,071	43,136,821	10.3	System			Suspended	259,781	35,557,340	6.0	1,081,174	128,783,501	24.6
Jun-06	580,086	43,727,017	13.7	System			Suspended	327,728	35,915,079	7.8	1,477,057	128,231,159	34.2
Jul-06	471,042	44,188,059	10.8	System			Suspended	237,858	36,132,820	5.6	1,243,085	128,474,824	28.6
Aug-06	335,076	44,733,134	12.4	System			Suspended	234,534	36,367,457	5.4	1,375,144	130,646,996	31.8
Sep-06	659,185	45,381,300	16.2	System			Suspended	305,870	36,604,133	7.1	1,826,323	132,826,346	38.3
Oct-06	645,325	45,928,824	12.7	System			Suspended	284,743	36,802,898	6.9	1,436,471	133,842,827	33.3
Nov-06	516,030	46,480,280	12.0	System			Suspended	291,273	37,284,169	6.7	1,378,316	135,821,137	31.9
Dec-06	551,820	47,007,880	12.8	System			Suspended	312,054	37,595,222	7.2	1,553,895	136,374,836	34.4
Jan-10	459,984	47,487,844	10.6	System			Suspended	146,968	37,834,211	4.3	817,138	137,181,872	18.8
Feb-10	448,247	47,918,082	10.4	System			Suspended	300,580	38,043,786	7.0	1,075,418	138,280,391	24.6
Mar-10	128,113	48,044,204	3.0	System			Suspended	124,989	38,269,452	2.9	484,377	138,748,788	11.2
Apr-10	457,472	48,501,876	10.8	System			Suspended	238,128	38,444,811	5.5	773,862	139,823,481	17.8
May-10	564,136	48,965,811	13.1	System			Suspended	282,179	38,736,790	6.6	81,838	139,876,298	1.2
Jun-10	448,854	49,512,785	10.3	System			Suspended	232,583	38,969,373	6.4	861,265	140,138,894	13.0
Jul-10	556,108	50,088,801	12.9	System			Suspended	190,862	39,196,395	4.5	1,231,200	141,267,884	29.8
Aug-10	503,698	50,576,448	11.7	System			Suspended	357,422	39,522,777	8.3	882,843	142,550,807	15.8
Sep-10	344,172	50,919,880	8.0	System			Suspended	247,522	39,770,326	5.7	1,317,892	143,398,398	20.5
Oct-10	434,270	51,353,888	10.1	System			Suspended	254,588	40,024,914	5.9	1,039,851	144,408,280	24.1
Nov-10	578,294	51,852,164	13.4	System			Suspended	110,020	40,134,814	2.6	1,448,164	145,858,484	33.5
Dec-10	481,821	52,353,784	10.7	System			Suspended	71,088	40,155,982	0.8	429,323	146,299,774	8.9
Jan-11	438,880	52,832,444	10.2	System			Suspended	160	40,156,133	0.0	158,855	146,445,428	3.7
Feb-11	78,484	52,911,838	1.8	System			Suspended	820	40,158,834	0.0	24,124	146,470,563	0.8
Mar-11	463,271	53,316,138	9.3	System			Suspended	21,820	40,178,173	0.5	869	146,471,442	0.0
Apr-11	384,774	53,889,813	9.2	System			Suspended	169,045	40,336,228	3.7	10,523	146,481,848	0.2
May-11	485,196	54,185,088	11.2	System			Suspended	20,1274	40,587,502	5.8	1,811	146,483,876	0.0
Jun-11	385,463	54,540,382	8.8	System			Suspended	258,504	40,846,006	6.0	728,727	147,210,304	18.8
Jul-11	140,834	54,881,498	3.3	System			Suspended	137,155	40,963,181	3.2	419,482	147,829,794	9.7
Aug-11	688,653	55,270,869	13.6	System			Suspended	267,977	41,241,138	6.0	1,180,816	148,820,876	27.8
Sep-11	411,832	55,681,800	9.5	System			Suspended	84,411	41,335,548	2.2	480,291	149,280,861	10.7
Oct-11	228,278	55,909,878	6.3	System			Suspended	184,183	41,499,741	3.8	687,974	149,888,835	18.8
Nov-11	418,467	56,328,285	9.8	System			Suspended	244,194	41,743,836	5.7	783,289	150,794,196	18.2
Dec-11	854,691	56,881,884	12.8	System			Suspended	308,083	42,081,368	7.1	1,083,497	151,847,571	25.3
Jan-12	442,779	57,325,834	10.2	System			Suspended	222,588	42,275,985	6.2	920,312	152,787,883	21.3
Feb-12	602,971	57,828,805	11.8	System			Suspended	220,463	42,488,038	5.1	1,017,895	153,786,480	23.6
Mar-12	818,878	58,445,692	14.3	System			Suspended	358,276	42,784,313	8.7	1,228,722	155,011,212	28.4
Apr-12	515,255	58,983,806	11.8	System			Suspended	285,837	43,095,150	6.6	1,052,628	156,074,251	24.8
May-12	485,838	59,448,844	11.2	System			Suspended	145,230	43,210,380	3.4	1,019,854	157,084,195	23.8
Jun-12	518,504	59,895,047	12.0	System			Suspended	292,023	43,488,623	6.8	779,737	157,873,882	18.0
Jul-12	432,385	60,387,483	9.8	System			Suspended	1,253	43,487,899	0.0	604,881	158,478,573	14.0
Aug-12	421,353	60,818,765	9.8	System			Suspended	145,157	43,522,813	3.8	794,330	159,272,883	18.4
Sep-12	120,428	60,928,211	2.8	System			Suspended	117,205	43,740,018	2.7	308,436	159,831,342	8.3
Oct-12	430,023	61,369,234	10.0	System			Suspended	221,890	43,981,079	5.1	572,322	160,263,574	13.3
Nov-12	630,287	61,809,521	12.3	System			Suspended	274,848	44,236,827	6.4	38,390	160,242,235	0.9
Dec-12	420,198	62,319,807	9.7	System			Suspended	219,096	44,435,253	5.1	418,410	160,837,848	9.8
Jan-13	622,746	62,842,426	12.1	System			Suspended	184,223	44,838,478	4.3	911,083	161,868,733	21.1
Feb-13	478,191	63,318,817	11.0	System			Suspended	335,877	44,875,455	7.8	606,378	162,074,110	11.7
Mar-13	323,522	63,842,138	7.5	System			Suspended	232,859	45,308,194	6.4	976,018	163,048,128	22.8
Apr-13	401,187	64,083,288	9.4	System			Suspended	226,310	45,447,464	5.5	769,884	163,818,952	17.8
May-13	643,587	64,583,893	12.6	System			Suspended	103,400	45,550,884	2.4	1,071,587	164,880,280	24.8
Jun-13	433,823	65,027,818	10.0	System			Suspended	19,925	45,570,889	0.5	317,697	165,207,885	7.4

Note: Monthly average based on 30-day months

Fourth Five-Year Review  
Charles Macon Lagoon and Drum Storage  
Cordova, Richmond County, NC

TABLE 1  
SUMMARY OF GROUNDWATER FLOW TOTALS  
MACONDOCKERY SITE Page 6 of 5

Date	Upper Dockery			Lower Dockery			Macon Source Area			Upper/Lower Macon		
	Monthly Flow (gallons)	Total Flow (gallons)	Flow Rate (gallons per minute)	Monthly Flow (gallons)	Total Flow (gallons)	Flow Rate (gallons per minute)	Monthly Flow (gallons)	Total Flow (gallons)	Flow Rate (gallons per minute)	Monthly Flow (gallons)	Total Flow (gallons)	Flow Rate (gallons per minute)
Jul-13	378,226	63,428,233	8.3	System			20,228	46,590,258	6.8	306,233	103,664,319	8.3
Aug-13	333,487	63,748,213	7.7	System			186,167	46,748,055	3.8	1,012,194	106,678,713	23.4
Sep-13	438,047	66,198,360	10.6	System			238,189	48,982,253	5.6	381,248	109,887,980	8.1
Oct-13	362,263	66,883,726	8.4	System			242,893	48,225,246	8.5	584,778	167,662,735	13.8
Nov-13	122,488	66,851,181	3.1	System			128,828	48,354,172	3.0	687,479	168,520,217	15.8
Dec-13	683,288	67,344,458	12.8	System			242,488	48,598,870	6.8	629,447	168,148,054	21.6
Jan-14	346,840	67,631,238	8.0	System			88,746	48,655,416	2.1	782,265	169,931,828	18.1
Feb-14	214,881	67,745,690	5.0	System			154,341	48,836,787	3.8	684,806	170,798,805	20.0
Mar-14	381,497	68,237,377	9.1	System			229,543	47,089,300	8.3	1,041,884	171,833,788	24.1
Apr-14	621,400	68,758,786	12.1	System			286,678	47,358,879	8.7	900,640	172,742,296	28.9
May-14	418,212	69,174,989	8.8	System			210,171	47,595,050	4.8	886,981	173,859,280	20.1
Jun-14	472,192	69,647,781	10.9	System			207,228	47,776,276	4.8	882,776	174,278,086	15.3
Jul-14	681,655	70,229,368	13.6	System			270,878	48,047,258	6.3	813,879	174,788,019	11.9

Note: Monthly average based on 30-day months

*Fourth Five-Year Review  
Charles Macon Lagoon and Drum Storage  
Cordova, Richmond County, NC*

**TABLE 2  
SUMMARY OF OPERATIONAL PERCENTAGES  
MACON/DOCKERY SITE  
RICHMOND COUNTY, NORTH CAROLINA**

Month	Upper Dockery (% Operational)	Lower Dockery (% Operational)	Macon Source Area (% Operational)	Upper Macon (% Operational)	Lower Macon (% Operational)	Soil-Vapor Extraction Unit (% Operational)
Jun-86	33	5	33	20	20	100
Jul-86	100	65	100	100	90	100
Aug-86	97	100	100	100	55	91
Sep-86	77	77	77	40	13	40
Oct-86	77	90	97	42	100	90
Nov-86	100	93	100	100	100	93
Dec-86	75	75	100	100	100	100
Jan-87	100	100	100	77	77	94
Feb-87	100	53	100	100	100	100
Mar-87	100	58	100	100	100	100
Apr-87	100	100	100	100	100	27
May-87	100	100	100	100	81	52
Jun-87	100	100	100	87	73	100
Jul-87	100	96	100	42	42	100
Aug-87	100	94	100	97	97	100
Sep-87	100	100	97	100	100	100
Oct-87	100	100	100	100	100	100
Nov-87	96	92	100	54	54	96
Dec-87	69	79	100	97	97	100
Jan-88	58	100	100	71	71	78
Feb-88	89	57	100	100	100	89
Mar-88	100	71	100	100	100	100
Apr-88	100	75	100	86	89	89
May-88	87	52	87	87	77	100
Jun-88	80	100	100	70	100	100
Jul-88	71	90	90	90	90	90
Aug-88	100	87	100	100	100	100
Sep-88	95	95	98	95	95	99
Oct-88	100	100	100	100	100	100
Nov-88	77	100	100	23	23	100
Dec-88	87	77	87	87	87	87
Jan-89	100	66	100	100	100	100
Feb-89	100	60	100	70	70	100
Mar-89	83	100	100	100	100	100
Apr-89	100	100	100	100	100	100
May-89	100	90	100	100	100	100
Jun-89	100	75	100	100	100	100
Jul-89	94	94	94	74	74	94
Aug-89	100	79	79	100	100	100
Sep-89	100	100	77	100	100	100
Oct-89	100	83	100	100	32	100
Nov-89	100	100	100	100	100	100
Dec-89	100	100	100	100	100	100
Jan-00	77	77	77	77	77	77
Feb-00	0	41	66	66	66	41
Mar-00	100	64	100	100	100	100
Apr-00	100	29	100	100	100	100
May-00	100	100	100	100	100	100
Jun-00	100	91	91	100	100	NR
Jul-00	100	100	100	81	81	NR

*Fourth Five-Year Review  
Charles Macon Lagoon and Drum Storage  
Cordova, Richmond County, NC*

**TABLE 2  
SUMMARY OF OPERATIONAL PERCENTAGES  
MACON/DOCKERY SITE  
RICHMOND COUNTY, NORTH CAROLINA**

Month	Upper Dockery (% Operational)	Lower Dockery (% Operational)	Macon Source Area (% Operational)	Upper Macon (% Operational)	Lower Macon (% Operational)	Soil-Vapor Extraction Unit (% Operational)
Aug-00	86	86	68	86	86	NR
Sep-00	100	100	100	100	100	NR
Oct-00	100	83	100	70	70	NR
Nov-00 to Jan-01	100	53	100	69	69	NR
Feb-01 to Apr-01	100	56	100	38	36	NR
May-01	100	100	100	100	100	NR
Jun-01	76	75	75	100	100	NR
Jul-01	97	61	100	100	100	suspended
Aug-01	71	68	100	71	100	suspended
Sep-01	43	0	100	100	100	suspended
Oct-01	100	90	100	36	100	suspended
Nov-01	100	53	100	3	100	suspended
Dec-01	100	45	100	100	100	suspended
Jan-02	100	0	84	100	90	suspended
Feb-02	100	25	100	100	100	suspended
Mar-02	100	90	100	68	68	suspended
Apr-02	83	23	100	83	93	suspended
May-02	0	77	100	100	100	suspended
Jun-02	10	100	100	100	100	suspended
Jul-02	45	23	22	22	22	suspended
Aug-02	77	0	100	58	58	suspended
Sep-02	100	100	100	100	100	suspended
Oct-02	100	100	100	9	9	suspended
Nov-02	73	0	100	100	100	suspended
Dec-02	38	0	80	0	80	suspended
Jan-03	80	20	83	0	100	suspended
Feb-03	100	29	100	29	100	suspended
Mar-03	100	81	100	100	100	suspended
Apr-03	6	100	100	100	100	suspended
May-03	0	100	100	100	100	suspended
Jun-03	75	75	100	100	0	suspended
Jul-03	51	80	100	80	0	suspended
Aug-03	65	100	100	26	0	suspended
Sep-03	0	100	100	0	0	suspended
Oct-03	80	100	100	100	33	suspended
Nov-03	100	73	100	100	100	suspended
Dec-03	48	71	100	100	100	suspended
Jan-04	100	100	100	100	100	suspended
Feb-04	100	100	100	100	100	suspended
Mar-04	100	100	100	100	100	suspended
Apr-04	100	suspended	100	100	100	suspended
May-04	76	suspended	100	88	88	suspended

Notes: NR = Not Recorded  
\*Lower Dockery Suspended on 3-19-04

**TABLE 2  
SUMMARY OF OPERATIONAL PERCENTAGES  
MACON/DOCKERY SITE  
RICHMOND COUNTY, NORTH CAROLINA**

Month	Upper Dockery (% Operational)	Lower Dockery (% Operational)	Macon Source Area (% Operational)	Upper Macon (% Operational)	Lower Macon (% Operational)	Soil-Vapor Extraction Unit (% Operational)
Jun-04	93	suspended	100	23	100	suspended
Jul-04	100	suspended	100	0	94	suspended
Aug-04	100	suspended	100	42	90	suspended
Sep-04	100	suspended	100	100	100	suspended
Oct-04	100	suspended	100	100	100	suspended
Nov-04	100	suspended	100	60	60	suspended
Dec-04	100	suspended	100	81	81	suspended
Jan-05	90	suspended	100	42	42	suspended
Feb-05	100	suspended	100	100	100	suspended
Mar-05	90	suspended	100	100	100	suspended
Apr-05	100	suspended	100	100	100	suspended
May-05	100	suspended	100	100	100	suspended
Jun-05	81	suspended	100	100	100	suspended
Jul-05	19	suspended	74	74	74	suspended
Aug-05	81	suspended	35	81	81	suspended
Sep-05	100	suspended	100	100	90	suspended
Oct-05	100	suspended	42	42	42	suspended
Nov-05	100	suspended	100	100	100	suspended
Dec-05	100	suspended	100	97	97	suspended
Jan-06	97	suspended	100	100	100	suspended
Feb-06	100	suspended	100	100	100	suspended
Mar-06	100	suspended	100	100	100	suspended
Apr-06	100	suspended	100	50	100	suspended
May-06	100	suspended	100	58	100	suspended
Jun-06	100	suspended	100	55	100	suspended
Jul-06	100	suspended	100	100	100	suspended
Aug-06	100	suspended	90	100	100	suspended
Sep-06	100	suspended	100	100	100	suspended
Oct-06	100	suspended	74	100	100	suspended
Nov-06	100	suspended	100	100	100	suspended
Dec-06	100	suspended	100	100	100	suspended
Jan-07	100	suspended	100	100	100	suspended
Feb-07	100	suspended	100	100	100	suspended
Mar-07	100	suspended	100	100	100	suspended
Apr-07	100	suspended	100	100	100	suspended
May-07	100	suspended	100	100	100	suspended

Notes: NR = Not Recorded  
\*Lower Dockery Suspended on 3-19-04



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Charles Macon Lagoon and Drum Storage  
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**TABLE 2  
SUMMARY OF OPERATIONAL PERCENTAGES  
MACON/DOCKERY SITE  
RICHMOND COUNTY, NORTH CAROLINA**

Month	Upper Dockery (% Operational)	Lower Dockery (% Operational)	Macon Source Area (% Operational)	Upper Macon (% Operational)	Lower Macon (% Operational)	Soil-Vapor Extraction Unit (% Operational)
Jul-07	100	suspended	100	100	100	suspended
Aug-07	100	suspended	100	100	100	suspended
Sep-07	40	suspended	83	63	83	suspended
Oct-07	100	suspended	74	81	81	suspended
Nov-07	100	suspended	100	75	75	suspended
Dec-07	100	suspended	100	48	48	suspended
Jan-08	100	suspended	100	100	100	suspended
Feb-08	100	suspended	100	65	65	suspended
Mar-08	100	suspended	100	100	0	suspended
Apr-08	100	suspended	100	100	0	suspended
May-08	100	suspended	100	100	0	suspended
Jun-08	100	suspended	100	100	0	suspended
Jul-08	100	suspended	100	100	0	suspended
Aug-08	25	suspended	100	60	0	suspended
Sep-08	95	suspended	100	100	0	suspended
Oct-08	60	suspended	76	80	0	suspended
Nov-08	100	suspended	100	5	0	suspended
Dec-08	100	suspended	100	85	0	suspended
Jan-09	21	suspended	80	45	0	suspended
Feb-09	100	suspended	100	100	0	suspended
Mar-09	88	suspended	63	65	0	suspended
Apr-09	42	suspended	85	92	0	suspended
May-09	89	suspended	100	100	0	suspended
Jun-09	100	suspended	100	100	0	suspended
Jul-09	100	suspended	100	100	0	suspended
Aug-09	100	suspended	100	100	0	suspended
Sep-09	100	suspended	100	100	0	suspended
Oct-09	100	suspended	100	100	0	suspended
Nov-09	100	suspended	100	100	0	suspended
Dec-09	100	suspended	100	100	0	suspended
Jan-10	100	suspended	81	95	0	suspended
Feb-10	100	suspended	100	100	0	suspended
Mar-10	30	suspended	75	35	0	suspended
Apr-10	95	suspended	100	88	0	suspended
May-10	100	suspended	100	11	suspended	suspended
Jun-10	100	suspended	100	42	suspended	suspended
Jul-10	100	suspended	95	96	suspended	suspended
Aug-10	100	suspended	100	65	suspended	suspended
Sep-10	85	suspended	100	100	suspended	suspended
Oct-10	100	suspended	100	100	suspended	suspended
Nov-10	100	suspended	75	75	suspended	suspended
Dec-10	100	suspended	10	52	suspended	suspended
Jan-11	92	suspended	0	25	suspended	suspended
Feb-11	5	suspended	0	20	suspended	suspended
Mar-11	96	suspended	15	10	suspended	suspended
Apr-11	100	suspended	100	100	suspended	suspended

Notes: NR = Not Recorded  
\*Lower Dockery Suspended on 3-19-04

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**TABLE 2  
SUMMARY OF OPERATIONAL PERCENTAGES  
MACON/DOCKERY SITE  
RICHMOND COUNTY, NORTH CAROLINA**

Month	Upper Dockery (% Operational)	Lower Dockery (% Operational)	Macon Source Area (% Operational)	Upper Macon (% Operational)	Lower Macon (% Operational)	Soil-Vapor Extraction Unit (% Operational)
Mar-11	96	suspended	15	10	suspended	suspended
Apr-11	100	suspended	100	100	suspended	suspended
May-11	100	suspended	100	5	suspended	suspended
Jun-11	100	suspended	100	80	suspended	suspended
Jul-11	52	suspended	75	47	suspended	suspended
Aug-11	100	suspended	100	95	suspended	suspended
Sep-11	100	suspended	51	42	suspended	suspended
Oct-11	75	suspended	86	86	suspended	suspended
Nov-11	100	suspended	100	95	suspended	suspended
Dec-11	100	suspended	100	100	suspended	suspended
Jan-12	100	suspended	100	51	suspended	suspended
Feb-12	100	suspended	100	45	suspended	suspended
Mar-12	100	suspended	100	100	suspended	suspended
Apr-12	85	suspended	100	100	suspended	suspended
May-12	100	suspended	85	100	suspended	suspended
Jun-12	100	suspended	87	87	suspended	suspended
Jul-12	39	suspended	39	39	suspended	suspended
Aug-12	42	suspended	45	77	suspended	suspended
Sep-12	70	suspended	80	100	suspended	suspended
Oct-12	100	suspended	87	100	suspended	suspended
Nov-12	100	suspended	100	100	suspended	suspended
Dec-12	100	suspended	100	45	suspended	suspended
Jan-13	100	suspended	71	87	suspended	suspended
Feb-13	100	suspended	100	57	suspended	suspended
Mar-13	100	suspended	100	58	suspended	suspended
Apr-13	100	suspended	100	100	suspended	suspended
May-13	100	suspended	100	68	suspended	suspended
Jun-13	100	suspended	57	50	suspended	suspended
Jul-13	100	suspended	48	87	suspended	suspended
Aug-13	94	suspended	100	100	suspended	suspended
Sep-13	100	suspended	94	100	suspended	suspended
Oct-13	94	suspended	100	100	suspended	suspended
Nov-13	100	suspended	100	93	suspended	suspended
Dec-13	100	suspended	94	100	suspended	suspended
Jan-14	100	suspended	77	77	suspended	suspended
Feb-14	100	suspended	100	100	suspended	suspended
Mar-14	71	suspended	100	100	suspended	suspended
Apr-14	77	suspended	77	77	suspended	suspended
May-14	100	suspended	81	74	suspended	suspended
<b>Period Avg for 6-1-13 to 6-1-14</b>	95	suspended	86	88	suspended	suspended
<b>Overall average</b>	88	suspended	92	79	suspended	suspended

Notes: NR = Not Recorded  
\*Lower Dockery Suspended on 3-19-04

Fourth Five-Year Review  
Charles Macon Lagoon and Drum Storage  
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TABLE 3 (Page 1 of 3)  
EFFLUENT Analytical Results  
UPPER DOCKERY  
Macon Dockery Site  
Richmond County, North Carolina

Sample Location	Date	1,1-Dichloro-ethane (ug/L)	1,1-Dibromo-ethane (ug/L)	Chloro-1,2-Dichloroethane (ug/L)	Tris-chloroethane (ug/L)	1,1,1-Trichloro-ethane (ug/L)	Trichloro-ethylene (ug/L)	Toluene (ug/L)	Total Xylenes (ug/L)	Aroclor (ug/L)	Chlorobenzene (ug/L)	Benzene (ug/L)	Naphthalene (ug/L)	Zinc (ug/L)	Lead (ug/L)	Suspended Solids (ug/L)
UD Effluent	5/2/1996	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	52	<10	<50	<5.0	<20	<3.0	<3.0
	6/5/1996	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<10	<50	<5.0	<20	<3.0	<3.0
	7/1/1996	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<10	<50	<5.0	<20	<3.0	<3.0
	8/1/1996	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	20	14	51	7	<20	<3.0	8
	9/6/1996	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<10	33	<5.0	<20	<3.0	<3.0
	10/1/1996	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<10	<50	3.9	<20	<3.0	<3.0
	11/7/1996	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	15	39	<5.0	<20	<3.0	<3.0
	12/5/1996	<1.0	1.5	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	12	54	5.1	<20	<3.0	<3.0
	1/6/1997	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	13	54	<5.0	<20	<3.0	<3.0
	2/5/1997	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	15	61	3.9	<20	<3.0	<3.0
	3/12/1997	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<10	69	<5.0	<20	<3.0	<3.0
	4/30/1997	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<10	81	<5.0	<20	<3.0	<3.0
	5/14/1997	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<10	60	7.2	<20	<3.0	<3.0
	6/18/1997	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<10	52	<5.0	<20	<3.0	<3.0
	7/2/1997	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<10	33	<5.0	<20	<3.0	<3.0
	8/7/1997	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<10	<50	<5.0	<20	<3.0	<3.0
	9/5/1997	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<10	118	3.2	<20	<3.0	<3.0
	10/2/1997	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<10	80.1	<5.0	<20	<3.0	<3.0
	11/13/1997	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	12.1	67.9	18.6	34.8	<3.0	<3.0
	12/5/1997	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<10	<50	<5.0	<20	<3.0	<3.0
	1/6/1998	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	11	<50	<5.0	<20	<3.0	<3.0
	2/5/1998	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<10	<50	<5.0	<20	<3.0	<3.0
	3/5/1998	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<10	<200	<15	<20	<3.0	<3.0
	4/3/1998	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<10	<200	5.2	<20	<3.0	<3.0
	5/7/1998	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	10	<50	<5.0	<20	<3.0	<3.0
	6/5/1998	<1.0	25	<1.0	<1.0	3.3	<1.0	<1.0	<3.0	<10	<10	37	<5.0	<20	<3.0	<3.0
	7/6/1998	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<10	51	<5.0	<20	<3.0	<3.0
	8/7/1998	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	13	33	<5.0	<20	<3.0	<3.0
	9/10/1998	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	11	38	<5.0	<20	<3.0	<3.0
	10/2/1998	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<25	<10	54	<10	<20	<3.0	<3.0
	11/4/1998	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	11	63	6.3	<20	<3.0	12
	12/1/1998	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<25	14	63	40	<20	<3.0	<3.0
	1/11/1999	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	11	55	<5.0	<20	<3.0	<3.0
	2/11/1999	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	15	73	23	<20	<3.0	<3.0
	3/5/1999	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<25	11	62	<5.0	<20	<3.0	<3.0
	4/6/1999	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	11	54	<5.0	<20	<3.0	<3.0
	5/12/1999	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	12	37	<5.0	<20	<3.0	<3.0
	6/10/1999	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	13	66	<5.0	<20	<3.0	<3.0
	7/8/1999	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	18	64	<5.0	<20	<3.0	<3.0
RPS		1500	7	70	1	200	2.8	1000	400	1500	50	1000	50	5000	15	

RPS: Reproduction Performance Standard

Fourth Five-Year Review  
Charles Macon Lagoon and Drum Storage  
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**TABLE 3 (Page 2 of 3)**  
**EFFLUENT Analytical Results**  
**UPPER DOCKERY**  
**Macon Dockery Site**  
**Richmond County, North Carolina**

Sample Location	Date	1,1-Dichloroethane (ug/L)	1,1-Dichloroethene (ug/L)	Chloro-1,2-Dichloroethane (ug/L)	Tetrachloroethene (ug/L)	1,1,1-Trichloroethane (ug/L)	Trichloroethene (ug/L)	Toluene (ug/L)	Total Xylenes (ug/L)	Acetone (ug/L)	Chloroform (ug/L)	Benzene (ug/L)	Manganese (ug/L)	Zinc (ug/L)	Lead (ug/L)	Suspended Solids (ug/L)
UD Effluent	9/5/1999	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	14	66	<5.0	<20	5.2	<3.0
	9/9/1999	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	14	61	<5.0	<20	<3.0	<3.0
	10/16/1999	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	14	68	<5.0	<20	<3.0	<3.0
	11/15/1999	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	13	58	<5.0	<20	<3.0	<3.0
	1/21/1999	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	11	64	<5.0	<20	<3.0	<3.0
	3/9/2000	<1.0	2.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	14	74	6.3	<20	<3.0	<3.0
	4/7/2000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	110	160	8.0	<20	<3.0	<3.0
	5/9/2000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	14	69	<5.0	<20	<3.0	<3.0
	6/9/2000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	110	79	<5.0	<20	<3.0	<3.0
	7/7/2000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	110	85	1.8	<20	<3.0	<3.0
	8/2/2000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	71	71	<5.0	<20	<3.0	<3.0
	9/25/2000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	110	83	<5.0	<20	<3.0	<3.0
	10/12/2000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	110	84	<5.0	<20	<3.0	<3.0
	1/11/2001	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	110	100	6.3	<20	<3.0	<3.0
	3/2/2001	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	14	80	5.7	<20	<3.0	<3.0
	7/11/2001	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	27	79	43.0	27	<3.0	8.0
	10/18/2001	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	14	74	5.4	<20	<3.0	<3.0
	1/16/2002	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	18	120	12.0	35	5	<3.0
	7/31/2002	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	53	5.8	<20	<3.0	<3.0
	10/30/2002	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	99	7.3	<20	<3.0	<3.0
	1/28/2003		NOT SAMPLED	SAMPLED SYSTEM DOWN		NOT SAMPLED				NOT SAMPLED						
	3/14/2003		NOT SAMPLED	SAMPLED SYSTEM DOWN		NOT SAMPLED				NOT SAMPLED						
	4/3/2003	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	110	83	5.1	<20	<3.0	<3.0
	7/10/2003	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	110	96	1.9	<20	<3.0	<3.0
	10/10/2003	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	110	33	<5.0	<20	<3.0	<3.0
	1/13/2004	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<25	11	71	15	34	<3.0	16.0
	4/5/2004	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<2.0	<25	12	68	<5.0	<20	<3.0	<3.0
	6/28/2004	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<2.0	<25	110	54	<5.0	<20	<3.0	<3.0
	10/21/2004	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<2.0	<25	<10	85	<5.0	<20	<3.0	<3.0
	1/27/2005	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	110	72	<5.0	<20	<3.0	<3.0
	3/4/2005	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	NA	62	NA	<20	<1.5	<3.0
	8/25/2005	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	18	69	<5.0	<20	<1.5	<3.0
	10/10/2005	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	14	75	<5.0	<20	<1.5	<3.0
	1/28/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	6.9	82	<5.0	<20	<1.5	<3.0
	4/10/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<5.0	88	<5.0	<20	<1.5	<3.0
	8/22/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	7.1	99	2.9	<20	<1.5	8.0
	10/26/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	7.8	91	6.5	<20	<1.5	<3.0
	1/27/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	18	81	12	<20	<1.5	7.0
	4/28/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	8.2	80	<5.0	<20	<1.5	<3.0

RFS 3500 7 70 1 200 2.8 1000 400 3500 50 1000 50 5000 15  
RFS: Remediation Performance Standard

Fourth Five-Year Review  
Charles Macon Lagoon and Drum Storage  
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**TABLE 3 (Page 3 of 3)**  
**EFFLUENT Analytical Results**  
**UPPER DOCKERY**  
Macon Dockery Site  
Richmond County, North Carolina

Sample Location	Date	1,1-Dichloro-ethane (ug/L)	1,1-Dichloro-ethene (ug/L)	Chloro-1,2-Dichloroethane (ug/L)	Trichloro-ethene (ug/L)	1,1,1-Trichloro-ethane (ug/L)	Trihalomethanes (ug/L)	Total Xylenes (ug/L)	Acetone (ug/L)	Chloroform (ug/L)	Benzene (ug/L)	Manganese (ug/L)	Zinc (ug/L)	Lead (ug/L)	Suspended Solids (ug/L)
	7/9/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	11	80	<5.0	<20	<1.5	<5.0
	10/28/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	8.9	81	<5.0	<20	<1.5	<5.0
	2/3/2008	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	10	71	<5.0	<20	<1.5	<5.0
	8/2/2008	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	9.8	67	<5.0	<20	<1.5	<5.0
	8/23/2008	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	13	83	<5.0	<20	<1.5	<5.0
	10/31/2008	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	10	67	<5.0	<20	<1.5	<5.0
	10/31/2008	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	10	67	<5.0	<20	<1.5	<5.0
	2/19/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	11	65	90	<20	<1.5	<5.0
	4/30/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	10	69	6.8	<20	<1.5	<5.0
	8/13/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	9.2	89	7.8	<20	<1.5	<5.0
	10/13/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	1/29/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	18	63	<5.0	<20	<1.5	<5.0
	5/20/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	10	58	<5.0	<20	<1.5	<5.0
	8/1/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	9.2	45	<5.0	<20	<1.5	<5.0
	10/14/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	11	76	9.2	<20	<1.5	<5.0
	1/1/2011	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	18	70	<5.0	<20	<1.5	<5.0
	5/19/2011	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	8.9	94	<5.0	<20	<1.5	<5.0
	8/18/2011	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	7.8	69	<5.0	<20	<1.5	<5.0
	11/11/2011	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	10.5	68	<5.0	<20	<1.5	<5.0
	2/22/2012	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	11	NS	<5.0	<20	<1.5	<5.0
	5/5/2012	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	12.1	23	<5.0	<20	<1.5	<5.0
	8/31/2012	System	Down	Not	Not	Not	Not	Not	Not	Not	Not	Not	Not	Not	Not
	11/5/2012	System	Down	Not	Not	Not	Not	Not	Not	Not	Not	Not	Not	Not	Not
	1/15/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	8.0	80	<5.0	<20	<1.5	<5.0
	4/5/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	12	83	<5.0	<20	<1.5	<5.0
	8/9/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	5.2	155	<5.0	<20	<1.5	<5.0
	10/24/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	11	74	<5.0	<20	<1.5	<5.0
	1/13/2014	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	7.2	55	<5.0	<20	<1.5	<5.0
	4/10/2014	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	9.8	250	13	<20	<1.5	<5.0
	8/14/2014	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	9.8	250	13	<20	<1.5	<5.0

RFS: Remediation Performance Standard \* = Data Not Include Nickel reported at 3.0ug/L on 2/19/2009 and 1.1ug/L on 4/30/2009 and 2.2ug/L on 8/13/2009

Fourth Five-Year Review  
Charles Macon Lagoon and Drum Storage  
Cordova, Richmond County, NC

**TABLE 4 (Page 1 of 2)**  
**EFFLUENT Analytical Results**  
**LOWER DOCKERY**  
Macon Dockery Site  
Richmond County, North Carolina

Sample Location	Date	Chloroform (ug/L)	1,1-Dichloroethane (ug/L)	1,1-Dichloroethene (ug/L)	Chloroform, 1,2-Dichloroethane (ug/L)	Methylene chloride (ug/L)	1,1,1-Trichloroethane (ug/L)	1,1,2-Trichloroethane (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Total Xylenes (ug/L)	Chromium (ug/L)	Berium (ug/L)	Manganese (ug/L)	Zinc (ug/L)	Cadmium (ug/L)	Suspended Solids (ug/L)	
LD Effluent	2/12/1996	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	<5.0	<20	<0.30	<5.0	
	2/14/1996	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	<5.0	<20	<0.30	<5.0	
	2/22/1996	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	<5.0	<20	<0.30	5	
	2/28/1996	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	<5.0	<20	<0.30	<5.0	
	3/8/1996	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	<5.0	<20	<0.30	<5.0	
	4/3/1996	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	<5.0	<20	<0.30	<5.0	
	5/2/1996	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	<5.0	<20	<0.30	<5.0	
	8/1/1996	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	14	<20	<0.30	<5.0	
	9/4/1996	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	13	<20	0.56	<5.0	
	10/1/1996	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	11	<20	<0.30	<5.0	
	11/7/1996	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.4	<3.0	<10	<50	<5.0	<20	<0.30	<5.0	
	12/5/1996	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	35	<20	<0.30	19	
	1/6/1997	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	6	<20	<0.30	<5.0	
	3/12/1997	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	78	<5.0	<20	<0.30	<5.0	
	4/8/1997	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	<5.0	<20	<0.30	<5.0	
	5/14/1997	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	<5.0	<20	<0.30	<5.0	
	6/6/1997	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	<5.0	<20	<0.30	<5.0	
	7/2/1997	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	<5.0	<20	<0.30	<5.0	
	8/7/1997	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	<5.0	<20	<0.30	<5.0	
	9/5/1997	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	<5.0	<20	<0.30	<5.0	
	10/2/1997	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	<5.0	<20	<0.30	<5.0	
	11/12/1997	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	<5.0	<20	<0.30	<5.0	
	12/5/1997	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	140	<20	<0.30	<5.0	
	1/9/1998	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	34	<20	<0.30	<5.0	
	2/5/1998	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	250	<20	<0.30	58	
	3/2/1998	<1.0	17	3.2	<1.0	<2.0	3.5	<1.0	<1.0	<1.0	<3.0	<10	<200	83	<20	<0.30	<5.0	
	4/2/1998	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<200	39	<20	<0.30	<5.0	
	5/7/1998	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	17	<20	<0.30	<5.0	
	6/9/1998	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	6.3	<20	<0.30	<5.0	
	7/6/1998	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	<5.0	<20	<0.30	<5.0	
	8/7/1998	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	<5.0	<20	<0.30	<5.0	
	9/12/1998	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	<5.0	<20	<0.30	<5.0	
	10/2/1998	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	17	140	<20	<0.30	<5.0
	11/4/1998	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	16	<20	<0.30	<5.0	
	12/1/1998	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	<5.0	<20	<0.30	<5.0	
	1/1/1999	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	3.2	<20	<0.30	<5.0	
	2/1/1999	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	15	<20	<0.30	<5.0	
	3/5/1999	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	<5.0	<20	<0.30	<5.0	
	4/8/1999	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	<5.0	<20	<0.30	<5.0	
	5/12/1999	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	<5.0	<20	52	9.5	
	6/18/1999	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	<5.0	<20	<0.30	<5.0	
	7/8/1999	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	<5.0	<20	<0.30	<5.0	
	8/5/1999	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	5.8	<20	<0.30	<5.0	
	9/9/1999	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	72	520	31	<0.30	<5.0	
	10/14/1999	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	93	670	38	<0.30	<5.0	
	11/2/1999	<1.0	2.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	11	<20	<0.30	<5.0	
	12/3/1999	<1.0	2.8	<1.0	<1.0	<2.0	1.2	<1.0	<1.0	<1.0	<3.0	<10	<50	110	<20	<0.30	<5.0	

RPS: Remediation Performance Standard

Fourth Five-Year Review  
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Cordova, Richmond County, NC

**TABLE 4 (Page 2 of 2)**  
**EFFLUENT Analytical Results**  
**LOWER DOCKERY**  
Macon Dockery Site  
Richmond County, North Carolina

Sample Location	Date	Chloroform (ug/L)	1,1-Dichloroethane (ug/L)	1,1-Dichloroethene (ug/L)	Chloroform-1,2-Dichloroethane (ug/L)	Methylene chloride (ug/L)	1,1,1-Trichloroethane (ug/L)	1,2-Dichloroethane (ug/L)	Bromoform (ug/L)	Toluene (ug/L)	Xylenes (ug/L)	Chlorobenzene (ug/L)	Benzonitrile (ug/L)	Manganese (ug/L)	Zinc (ug/L)	Cadmium (ug/L)	Suspended Solids (ug/L)	
L.D Effluent	3/25/2000	<1.0	<1.0	<1.0	<1.0	<1.0	2.6	<1.0	<1.0	<1.0	<3.0	<10	<50	328	<20	<0.30	<1.0	
	3/9/2000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	53	<20	<0.30	<1.0	
	4/7/2000	**	System	Down	Not	Sampled	**	**	**	System	Down	Not	Sampled	Not	Sampled	Not	Sampled	
	5/9/2000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	182	<20	<0.30	<1.0	
	6/9/2000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	<5.0	<20	<0.30	<1.0	
	7/7/2000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	100	<20	<0.30	<1.0	
	8/27/2000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	<5.0	<20	<0.30	<1.0	
	9/25/2000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	<5.0	97	<0.30	<1.0	
	10/12/2000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	<5.0	97	<0.30	<1.0	
	1/18/2001	**	System	Down	Not	Sampled	**	**	**	**	System	Down	Not	Sampled	Not	Sampled	Not	Sampled
	4/24/2001	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	<5.0	<20	<0.30	<1.0	
	5/11/2001	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	<5.0	<20	<0.30	<1.0	
	7/11/2001	**	System	Down	Not	Sampled	**	**	**	**	System	Down	Not	Sampled	Not	Sampled	Not	Sampled
	10/18/2001	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	<5.0	<20	<0.30	<1.0	
	1/16/2002	System	Down	Not	Sampled	System	Down	Not	Sampled	System	Down	Not	Sampled	System	Down	Not	Sampled	
	7/31/2002	System	Down	Not	Sampled	System	Down	Not	Sampled	System	Down	Not	Sampled	System	Down	Not	Sampled	
	10/28/2002	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	58	<20	<0.30	<1.0	
	1/29/2003	System	Down	Not	Sampled	System	Down	Not	Sampled	System	Down	Not	Sampled	System	Down	Not	Sampled	
	3/14/2003	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	<5.0	<20	<0.30	<1.0	
	4/3/2003	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	<5.0	<20	<0.30	<1.0	
	7/19/2003	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	<5.0	<20	<0.30	<1.0	
	10/30/2003	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	<5.0	<20	<0.30	<1.0	
	1/13/2004	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<3.0	<10	<50	<5.0	<20	<0.30	<1.0	
	4/9/2004	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	
	6/28/2004	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	
	1/27/2005	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	
	5/4/2005	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	
	8/25/2005	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	
	10/30/2005	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	
	1/28/2006	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	
4/30/2006	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled		
8/2/2006	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled		
10/29/2006	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled		
1/27/1007	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled		
4/29/2007	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled		
7/29/2007	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled		
10/28/2007	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled		
2/3/2008	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled		
6/22/2008	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled		
8/23/2008	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled		
10/17/2008	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled		
2/19/2009	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled		
4/30/2009	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled		
8/13/2009	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled		
10/17/2009	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled		
					No	Future	Samples	Collected										

R.P.E. Remediation Performance Standard

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**TABLE 5 (Page 1 of 3)**  
**EFFLUENT Analytical Results**  
**MACON SOURCE AREA**  
Macon Dockway 38a  
Richmond County, North Carolina

Sample Location	Date	Ammonia (mg/L)	nitrate (mg/L)	nitrite (mg/L)	Dichloromethane (mg/L)	Chloroform (mg/L)	1,1,1-trichloroethane (mg/L)	1,1,2-trichloroethane (mg/L)	1,1,2,2-tetrachloroethane (mg/L)	1,2-dichlorobenzene (mg/L)	1,4-dichlorobenzene (mg/L)	Toluene (mg/L)	Chlorobenzene (mg/L)	Benzene (mg/L)	Monoaromatics (mg/L)	Zinc (mg/L)	Cadmium (mg/L)	Lead (mg/L)	Mercury (mg/L)	Sulfide (mg/L)	
UMCLA Effluent	2/17/1996	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	120	120	<20	<0.30	<0.0	<0.5	
	2/22/1996	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	120	70	<20	<0.30	<0.0	<0.5	
	2/28/1996	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	130	51	<20	<0.30	<0.0	<0.5	
	3/8/1996	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	128	37	<20	<0.30	<0.0	<0.5	
	4/2/1996	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	118	37	<20	<0.30	<0.0	<0.5	
	5/3/1996	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	128	26	<20	<0.30	<0.0	<0.5	
	6/3/1996	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.9	<1.0	<1.0	130	22	<20	<0.30	<0.0	<0.5	
	7/1/1996	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	12	118	14	<20	<0.30	<0.0	
	7/20/1996	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	200	118	41	<20	9.2	NA	
	9/4/1996	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	11	170	66	36	<20	66	
	10/1/1996	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	130	13	<20	8.47	<0.0	NA	
	11/7/1996	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	140	13	<20	<0.30	<0.0	NA	
	12/28/1996	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	176	17	<20	<0.30	<0.0	<0.20	
	1/6/1997	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	200	46	25	<20	3.5	NA	
	2/4/1997	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	160	29	<20	<0.30	<0.0	NA	
	3/12/1997	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	138	30	<20	<0.30	<0.0	<0.5	
	4/2/1997	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	200	38	<20	<0.30	<0.0	NA	
	5/12/1997	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	12	218	95	35	<20	<0.0	100
	6/4/1997	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	240	74	<20	<0.30	<0.0	NA	
	7/2/1997	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	180	41	<20	<0.30	<0.0	NA	
	8/7/1997	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	11	230	230	46	<20	4.8	NA
	9/2/1997	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	130	27	<20	<0.30	<0.0	NA	
	10/2/1997	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	185	31.5	<20	<0.30	<0.0	NA	
	11/12/1997	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	129	84.2	<20	<1	<0.0	NA	
	12/2/1997	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	158	160	26	<20	<0.30	6.5	NA
	1/8/1998	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	180	33	<20	<0.30	<0.0	NA	
	2/5/1998	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	200	30	<20	<0.30	<0.0	NA	
	3/5/1998	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	11	210	160	25	<20	4.1	NA
	4/2/1998	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<200	64	<20	<0.30	<0.0	NA	
	5/7/1998	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	210	318	29	<20	5	NA	
	6/2/1998	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	160	46	<20	<0.30	<0.0	NA	
	7/6/1998	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	340	118	<20	<0.30	<0.0	NA	
	8/7/1998	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	190	37	<20	<0.30	<0.0	NA	
	9/10/1998	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	200	56	<20	<0.30	<0.0	NA	
	10/2/1998	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	190	110	<20	<0.30	<0.0	NA	
	11/4/1998	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	10	220	650	48	<20	4.6	NA
	12/1/1998	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	180	88	<20	<0.30	<0.0	NA	
	1/1/1999	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	150	120	<20	<0.30	<0.0	NA	
	2/1/1999	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	230	120	22	<20	<0.30	<0.0	NA
	3/2/1999	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	188	100	25	<20	<0.30	NA	
	4/6/1999	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	178	72	<20	<0.30	<0.0	NA	
	5/12/1999	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	170	66	<20	36	<0.0	NA	
	6/1/1999	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	180	100	<20	<0.30	<0.0	NA	
	7/6/1999	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	178	160	<20	<0.30	3.3	NA	
	8/5/1999	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	140	13	<20	<0.30	8.7	NA	
	9/5/1999	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	128	340	24	<20	<0.30	NA	
	10/14/1999	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	200	37	<20	<0.30	<0.0	NA	
	11/2/1999	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	180	13	<20	<0.30	<0.0	NA	
	12/1/1999	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	188	18	<20	<0.30	<0.0	NA	

DFE  
DFE: Residuals Parameter Deleted  
NA: Not Analyzed



**Fourth Five-Year Review**  
**Charles Macon Lagoon and Drum Storage**  
**Cordova, Richmond County, NC**

**TABLE 5 (Page 2 of 3)**  
**EFFLUENT Analytical Results**  
**MACON SOURCE AREA**  
 Macon Dockery 8th  
 Richmond County, North Carolina

Sample Location	Date	Amn (ug/L)	arsenic (ug/L)	cadmium (ug/L)	Cyanides (ug/L)	chromium (ug/L)	chloride (ug/L)	fluoride (ug/L)	phosphate (ug/L)	nitrate (ug/L)	nitrite (ug/L)	silica (ug/L)	total solids (ug/L)	total suspended solids (ug/L)	total dissolved solids (ug/L)	total phosphorus (ug/L)	total nitrogen (ug/L)	total organic carbon (ug/L)	total organic nitrogen (ug/L)	total organic phosphorus (ug/L)	total organic nitrogen (ug/L)	total organic phosphorus (ug/L)	total organic nitrogen (ug/L)	total organic phosphorus (ug/L)		
	2/14/2000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	240	300	46	<0.30	5.3	NA	130					
	3/9/2000	<1.0	<1.0	16	<1.0	1.0	2.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	230	47	<20	<0.30	<3.0	NA	5.0					
	4/7/2000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	210	46	<20	<0.30	<3.0	NA	<5.0					
	5/6/2000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	410	54	<20	<0.30	<3.0	NA	<5.0					
	6/6/2000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	180	61	<20	<0.30	<3.0	NA	<5.0					
	7/7/2000	<1.0	<1.0	9.8	<1.0	<1.0	1.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	220	250	31	<0.30	3.8	NA	<5.0					
	8/2/2000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	190	80	<20	<0.30	4.1	NA	38.0					
	9/13/2000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	280	83	<20	<0.30	<3.0	NA	<5.0					
	10/13/2000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	14	180	84	<20	<0.30	3.7	NA	6.0				
	1/16/2001	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	220	79	<20	<0.30	<3.0	NA	8.5					
	5/3/2001	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	28	440	350	29	<0.30	1.9	NA	<5.0				
	7/11/2001	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	15	340	110	<20	<0.30	3.7	NA	38				
	10/18/2001	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	80	450	900	47	<0.30	2.1	NA	<5.0				
	12/26/2001	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	11	380	118	<20	<0.30	<3.0	NA	8.0				
	1/15/2002	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	360	35	<20	<0.30	<3.0	NA	8.0					
	7/30/2002	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	21	370	130	<20	<0.30	3.0	NA	11.0				
	10/30/2002	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	20	370	98	<20	<0.30	4.0	<0.20	6.0				
	1/28/2003	NOT	SAMPLED	SYSTEM	DOWN	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	17	410	240	43	<0.30	4.0	<0.20	<5.0				
	3/14/2003	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	11	350	44	<20	<0.30	3.0	<0.20	7				
	4/5/2003	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	370	71	<20	<0.30	<3.0	<0.20	42					
	7/10/2003	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	360	170	128	<20	<0.30	<3.0	<0.20	<5.0				
	10/20/2003	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	76	400	1000	216	6.47	6.1	NA	27				
	1/13/2004	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	230	54	<20	<0.30	<3.0	NA	33					
	4/5/2004	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	160	62	<20	<0.30	<3.0	NA	<5.0					
	6/29/2004	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	180	18	<20	<0.30	<3.0	NA	<5.0					
	10/21/2004	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	170	8.5	<20	<0.30	<3.0	NA	<5.0					
	1/27/2005	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	140	NA	<20	<0.30	<1.5	NA	<5.0				
	3/4/2005	<1.0	<1.0	12	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	11	218	200	49	<20	<0.30	3.0	NA	<5.0			
	8/25/2005	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	160	44	<20	<0.30	NA	NA	<5.0					
	10/9/2005	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	150	8.1	<20	<0.30	<1.5	NA	<5.0					
	1/28/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	170	100	<20	<0.30	2.6	NA	18					
	4/30/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	7.0	300	36	<20	<0.30	<1.5	NA	<5.0				
	8/2/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	170	13	<20	<0.30	<1.5	NA	NA	<5.0				
	10/29/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	11	218	200	49	<20	<0.30	3.0	NA	<5.0			
	1/27/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5	150	140	22	NA	6.2	NA	19				
	4/29/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	160	82	<20	<0.30	1.9	<0.20	8.0				
	7/26/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	180	220	21	0.33	6.6	NA	<5.0				
	10/12/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	160	22	<20	<0.30	<1.5	NA	<5.0					
	3/3/2008	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	8.9	190	95	<20	<0.30	1.8	NA	<5.0				
	6/3/2008	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	150	15	<20	<0.30	<1.5	NA	<5.0					
	8/23/2008	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	6.8	180	97	<20	<0.30	2.5	NA	<5.0				
	10/1/2008	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	8.0	160	63	<20	<0.30	1.7	<0.20	<5.0				
	2/1/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5.9	120	67	<20	<0.30	<1.5	<0.20	<5.0				
	4/5/2009	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5.1	170	25	<20	<0.30	<1.5	<0.20	<5.0				
	8/13/2009	NS	NS	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5.1	170	17	<20	<0.30	<1.5	<0.20	<5.0				
	10/1/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS			
	1/29/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5.1	170	17	<20	<0.30	<1.5	<0.20	<5.0				

*Fourth Five-Year Review  
Charles Macon Lagoon and Drum Storage  
Cordova, Richmond County, NC*

**TABLE 5 (Page 3 of 3)  
EFFLUENT ANALYTICAL RESULTS  
MACON SOURCE AREA  
Macon Dockery Site  
Richmond County, North Carolina**

Sample Location	Date	Barium (ug/L)	arsenic (ug/L)	arsenic (ug/L)	Dichloromethane (ug/L)	arsenic (ug/L)	arsenic (ug/L)	arsenic (ug/L)	arsenic (ug/L)	chloride (ug/L)	benzene (ug/L)	Toluene (ug/L)	Chloroethene (ug/L)	Bertholite (ug/L)	Manganese (ug/L)	Zinc (ug/L)	Cadmium (ug/L)	Lead (ug/L)	Miscellaneous (ug/L)	Sulfide (ug/L)
	5/25/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	8.0	250	16	23	<0.50	<1.5	<0.20	<5.0
	8/1/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	7.2	280	<5.0	<20	<0.50	<1.5	NS	<5.0
	10/14/2010	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	6.8	210	<5.0	<20	6.5	<1.5	NS	<5.0
	1/11/2011	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/10/2011	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	9.3	260	21	<20	<0.50	<1.5	NS	<5.0
	9/19/2011	<1.0	<1.0	1.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	22	220	78	<20	<0.50	2.4	NS	7.5
	1/11/2011	<1.0	<1.0	1.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	22	225	26	<20	<0.50	<1.5	NS	<5.0
	2/22/2012	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	6.7	232	8.9	<20	<0.50	<1.5	NS	<5.0
	3/5/2012	<1.0	<1.0	1.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	21	218	32	<20	<0.50	<1.5	NS	<5.0
	8/31/2012	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	6.5	258	5.7	<20	<0.50	<1.5	<0.20	<5.0
	1/15/2013	System Down		Not Sampled	Not Sampled															
	1/15/2013	System Down		Not Sampled																
	4/5/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	5.5	240	<5.0	<20	<0.50	<1.5	<0.20	<5.0
	9/9/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	29	260	180	47	<0.50	7.7	<0.20	9.5
	10/24/2013	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	11	95	17	<20	<0.50	<1.5	<0.20	<5.0
	1/16/2014	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	18	250	65	<20	<0.50	<1.5	<0.20	<5.0
	4/16/2014	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	12	210	34	<20	<0.50	<1.5	<0.20	<5.0
	8/14/2014	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	240	25	<20	<0.50	<1.5	<0.20	11

NS: Not Analyzed  
 3500: Does not include Nickel at 3.2 ug/L 8/15/2009, Barium at 1.7 ug/L 9/9/2013, Nickel at 23 ug/L 9/9/2013, Nickel at 5.2 ug/L 8/14/2014  
 70: 1  
 200: 2.8  
 1000: 1  
 50: 1000  
 20: 5000  
 5: 15  
 1.1: 1.1

*Fourth Five-Year Review  
Charles Macon Lagoon and Drum Storage  
Cordova, Richmond County, NC*

**TABLE 4 (Page 1 of 3)  
EFFLUENT Analytical Results  
UPPER/LOWER MACON  
Macon Dockery Site  
Richmond County, North Carolina**

Sample Location	Date	Cadmium (ug/L)	1,1-Dichloro-ethene (ug/L)	1,1-Dichloro-ethane (ug/L)	Chloroform (ug/L)	Methylene chloride (ug/L)	Tetrachloro-ethene (ug/L)	1,1,1-Trichloro-ethene (ug/L)	Trichloro-ethene (ug/L)	Toluene (ug/L)	Chromium (ug/L)	Boron (ug/L)	Manganese (ug/L)	Zinc (ug/L)	Cobalt (ug/L)	Lead (ug/L)	Sequential Solids (mg/L)
UL Effluent	2/24/1996	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	83	150	150	<0.30	3.7	<5.0
	2/25/1996	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	90	160	170	<0.30	3.6	<5.0
	2/28/1996	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<50	32	59	<0.30	<3.0	8
	3/8/1996	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<50	39	56	<0.30	<3.0	<5.0
	3/16/1996	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<50	31	51	<0.30	<3.0	<5.0
	6/3/1996	<1.0	1.8	<1.0	1.6	<2.0	<1.0	<1.0	1.9	<1.0	<10	<50	44	54	<0.30	1.6	10
	5/3/1996	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	31	10	21	<0.30	<3.0	<5.0
	6/5/1996	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	2.1	<10	<50	7.5	<20	<0.30	<3.0	<5.0
	7/1/1996	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<50	<5.0	<20	<0.30	<3.0	<5.0
	7/5/1996	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<50	<5.0	<20	<0.30	<3.0	<5.0
	9/6/1996	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<50	<5.0	<20	<0.30	<3.0	<5.0
	10/1/1996	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<50	<5.0	<20	<0.30	<3.0	24
	11/7/1996	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<50	<5.0	<20	<0.30	<3.0	<5.0
	12/3/1996	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<50	<5.0	<20	<0.30	<3.0	<5.0
	1/6/1997	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<50	<5.0	<20	<0.30	<3.0	<5.0
	2/4/1997	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	39	<5.0	<20	<0.30	<3.0	8
	3/12/1997	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<50	<5.0	<20	<0.30	<3.0	<5.0
	4/8/1997	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<50	<5.0	<20	<0.30	<3.0	<5.0
	5/12/1997	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<50	<5.0	<20	<0.30	<3.0	<5.0
	6/6/1997	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<50	<5.0	<20	<0.30	<3.0	<5.0
	7/2/1997	<1.0	2.4	<1.0	1.8	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<50	79	<20	<0.30	<3.0	<5.0
	7/23/1997	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	36	NA	<0.30	NA	NA
	8/7/1997	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<50	3.4	<20	<0.30	3.1	NS
	9/2/1997	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<50	<5.0	<20	<0.30	<3.0	<5.0
	10/2/1997	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<50	6.3	<20	<0.30	<3.0	23
	11/13/1997	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<50	<5.0	<20	<0.30	<3.0	<5.0
	12/9/1997	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<50	<5.0	<20	<0.30	<3.0	<5.0
	1/9/1998	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<50	<5.0	<20	<0.30	<3.0	<5.0
	2/5/1998	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	36	<5.0	<20	<0.30	<3.0	<5.0
	3/5/1998	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<200	<15	<20	<0.30	<3.0	<5.0
	4/3/1998	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<200	<5.0	<20	<0.30	<3.0	<5.0
	5/7/1998	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<50	<5.0	<20	<0.30	<3.0	NA
	6/9/1998	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<50	<5.0	<20	<0.30	<3.0	<5.0
	7/9/1998	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<50	<5.0	<20	<0.30	<3.0	<5.0
	8/7/1998	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<50	9.2	<20	<0.30	<3.0	<5.0
	9/16/1998	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<50	6.7	<20	<0.30	<3.0	<5.0
	10/2/1998	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	31	<10	<20	<0.30	<3.0	<5.0
	11/6/1998	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<50	6.2	<20	<0.30	<3.0	<5.0
	12/1/1998	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<50	<5.0	<20	<0.30	<3.0	<5.0
	1/1/1999	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<50	<5.0	<20	<0.30	<3.0	<5.0
	2/11/1999	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<50	<5.0	<20	<0.30	<3.0	<5.0
	3/5/1999	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<50	<5.0	<20	<0.30	<3.0	<5.0
	4/2/1999	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<50	<5.0	<20	<0.30	<3.0	<5.0
	5/13/1999	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<50	<5.0	<20	<0.30	<3.0	<5.0
	6/10/1999	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<50	<5.0	<20	<0.30	<3.0	<5.0

RPS: Remediation Performance Standard  
NA: Not Analyzed

Fourth Five-Year Review  
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**TABLE 6 (Page 3 of 3)**  
**EFFLUENT Analytical Results**  
**UPPER/LOWER MACON**  
Macon Dockery Site  
Richmond County, North Carolina

Sample Location	Date	Chloroform (ug/L)	1,1-Dichloroethane (ug/L)	1,2-Dichloroethane (ug/L)	Chloroform-2-Dichloroethane (ug/L)	Methylene chloride (ug/L)	Trichloroethane (ug/L)	1,1,1-Trichloroethane (ug/L)	Trichloroethene (ug/L)	Toluene (ug/L)	Chlorobenzene (ug/L)	Benzene (ug/L)	Manganese (ug/L)	Zinc (ug/L)	Cadmium (ug/L)	Lead (ug/L)	Selenium (ug/L)
U/L Effluent	7/2/1999	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<20	<0.30	<1.0	<1.0	
	8/5/1999	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	47	<20	<0.30	1.7	<1.0
	9/9/1999	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<20	<0.30	<1.0	<1.0	<1.0
	10/14/1999	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<20	<0.30	<1.0	<1.0	<1.0
	11/5/1999	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<20	<0.30	<1.0	<1.0	<1.0
	12/3/1999	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<20	<0.30	<1.0	<1.0	<1.0
	2/17/2000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<20	<0.30	<1.0	<1.0	<1.0
	3/9/2000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<20	<0.30	<1.0	<1.0	<1.0
	4/7/2000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<20	<0.30	<1.0	<1.0	<1.0
	5/8/2000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<20	<0.30	<1.0	<1.0	<1.0
	6/9/2000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<20	<0.30	<1.0	<1.0	<1.0
	7/7/2000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	20	<20	<0.30	<1.0	<1.0
	8/2/2000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<20	<0.30	<1.0	<1.0	<1.0
	9/25/2000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	27	<0.30	<1.0	<1.0	<1.0
	10/12/2000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<20	<0.30	<1.0	<1.0	<1.0
	11/19/2001	NS	Not Sampled	System	Down	NS	NS	NS	NS	NS	NS	NS	NS	System	Down	NS	NS
	6/24/2001	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<20	<0.30	<1.0	<1.0	<1.0
	5/2/2001	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<20	<0.30	<1.0	<1.0	<1.0
	7/20/2001	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<20	<0.30	<1.0	<1.0	<1.0
	10/18/2001	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<20	<0.30	<1.0	<1.0	<1.0
	12/28/2001	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<20	<0.30	<1.0	<1.0	<1.0
	1/15/2002	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<20	<0.30	<1.0	<1.0	<1.0
	7/31/2002	NS	Not Sampled	System	Down	NS	NS	NS	NS	NS	NS	NS	NS	System	Down	NS	NS
	10/30/2002	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	84	<5.0	<20	<0.30	<1.0	<1.0
	12/8/2002	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	38	<20	<0.30	7.5	7	<1.0
	4/7/2003	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	11	<20	<0.30	<1.0	<1.0
	7/10/2003	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	38	<20	<0.30	<1.0	<1.0
	10/30/2003	<1.0	<1.0	1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	11	<20	<0.30	<1.0	<1.0
	11/15/2004	<1.0	<1.0	9.8	<2.0	<5.0	1.9	<1.0	<1.0	<1.0	<1.0	<5.0	29	24	<0.30	<1.0	28
	4/28/2004	<1.0	<1.0	<1.0	<2.0	<5.0	1.6	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<20	<0.30	<1.0	<1.0
	6/28/2004	NS	Not Sampled	System	Down	NS	NS	NS	NS	NS	NS	NS	NS	System	Down	NS	NS
	10/21/2004	<1.0	<1.0	8.5	1.0	<5.0	1.3	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<20	<0.30	<1.0	<1.0
	12/7/2004	<1.0	<1.0	<1.0	<2.0	<5.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<20	<0.30	<1.0	<1.0
	3/4/2005	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	30	NA	<0.30	<1.0	<1.0
	8/25/2005	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	34	<5.0	<20	<0.30	<1.0
	10/30/2005	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	37	<5.0	<20	<0.30	<1.0
	12/8/2005	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	35	<5.0	<20	<0.30	<1.0
	4/30/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	3.8	<5.0	17	<0.30	<1.0
	8/2/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	36	<5.0	<20	<0.30	<1.0
	10/29/2006	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	31	39	<5.0	<20	<0.30
	12/7/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	38	<5.0	<20	NA	<1.5
	4/29/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	38	7.5	<20	<0.30	<1.5
	7/29/2007	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	43	<5.0	<20	<0.30	<1.5
	10/26/2007	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

RFS: Remedial Performance Standard      NA: Not Analyzed      NS: Not Sampled

Fourth Five-Year Review  
Charles Macon Lagoon and Drum Storage  
Cordova, Richmond County, NC

TABLE 6 (Page 3 of 3)  
EFFLUENT Analytical Results  
UPPER/LOWER MACON  
Macon Dockery Site  
Richmond County, North Carolina

Sample Location	Date	Chloroform (ug/L)	1,1-Dichloroethene (ug/L)	1,1-Dichloroethane (ug/L)	Chloro-1,2-Dichloroethane (ug/L)	Methylene chloride (ug/L)	Tetrachloroethene (ug/L)	1,1,1-Trichloroethene (ug/L)	Trichloroethene (ug/L)	Toluene (ug/L)	Chromium (ug/L)	Barium (ug/L)	Magnesium (ug/L)	Zinc (ug/L)	Cadmium (ug/L)	Lead (ug/L)	Suspended Solids (mg/L)
	5/3/2008	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<5.0	45	<5.0	<2.0	<0.25	<1.5	<5.0
	6/2/2008	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	8/23/2008	<1.0	<1.0	1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.8	<5.0	49	<5.0	<2.0	<0.50	<1.5	<5.0
	10/1/2008	<1.0	<1.0	1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.8	<5.0	48	<5.0	<2.0	<0.50	<1.5	<5.0
	2/19/2009	<1.0	<1.0	1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<5.0	41	<5.0	<2.0	<0.50	<1.5	<5.0
	4/30/2009	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<5.0	38	<5.0	<2.0	<0.50	<1.5	<5.0
	8/13/2009	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<5.0	32	<5.0	<2.0	<0.50	<1.5	<5.0
	10/1/2009	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	12/29/2010	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	9.4	64	<5.0	<2.0	<0.50	<1.5	<5.0	
	10/1/2010	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.8	<5.0	<5.0	<5.0	<2.0	<0.50	<1.5	<5.0
	10/14/2010	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.8	<5.0	<5.0	<5.0	<2.0	<0.50	<1.5	<5.0
	1/3/2011	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	3/10/2011	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<5.0	<5.0	<5.0	<2.0	<0.50	<1.5	<5.0
	6/18/2011	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<5.0	63	<5.0	<2.0	<0.50	<1.5	<5.0
	11/1/2011	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<5.0	23	<5.0	<2.0	<0.50	<1.5	<5.0
	2/22/2012	<1.0	<1.0	2.2	<1.0	<2.0	1	<1.0	<1.0	<1.0	<5.0	39	<5.0	<2.0	<0.50	<1.5	<5.0
	5/5/2012	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.8	<5.0	35	<5.0	<2.0	<0.50	<1.5	<5.0
	8/31/2012	System Down	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled
	11/5/2012	System Down	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled
	1/15/2013	System Down	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled	Not Sampled
	4/25/2013	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
	6/12/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<5.0	35	<5.0	<2.0	<0.50	<1.5	<5.0
	10/24/2013	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	6.2	71	5.5	<2.0	<0.50	<1.5	<5.0
	1/18/2014	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	10	42	5.6	<2.0	<0.50	<1.5	<5.0	
	4/10/2014	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.8	31	<5.0	<2.0	<0.50	<1.5	<5.0	
	8/14/2014	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.8	9.3	360	25	21	<0.50	<1.5	24

RPS: Remediation Performance Standard      NA: Not Analyzed      NS: Not Sampled

Fourth Five-Year Review  
Charles Macon Lagoon and Drum Storage  
Cordova, Richmond County, NC

TABLE 7  
Influent Analytical Results  
Upper Deckery  
Macon/Deckery Site  
Richmond County, North Carolina

Sample Location	Date	1,1-Dichloroethane (ug/L)	1,1-Dichloroethene (ug/L)	Chloroform (ug/L)	Tetrachloroethene (ug/L)	1,1,1-Trichloroethene (ug/L)	Trichloroethene (ug/L)	Toluene (ug/L)	Total Xylenes (ug/L)	Acetone (ug/L)	Chloroform (ug/L)	Benzene (ug/L)	Manganese (ug/L)	Zinc (ug/L)	Lead (ug/L)	Suspended Solids (ug/L)
UD Inflow	2/13/1996	4.8	130E	1.3	1.3	54	8	3	3.1	<10	20	92	64	33	3.1	51
	2/13/1996	7.7	130	<1.0	<1.0	33	<1.0	<1.0	<1.0	<10	<10	<10	<10	<10	<10	<10
	2/14/1996	4.3	99E	1.2	<1.0	35	4.5	<1.0	<1.0	<10	12	53	14	<10	<10	<10
	2/14/1996	6.5	100	<1.0	<1.0	34	5.1	<1.0	<1.0	<10	<10	<10	<10	<10	<10	<10
	2/14/1996	4.4	120E	1.4	1.3	50	7.9	<1.0	<1.0	<10	11	54	14	<10	<10	<10
	2/14/1996	4.0	110	<1.0	<1.0	48	7.8	<1.0	<1.0	<10	<10	<10	<10	<10	<10	<10
	2/15/1996	4.5	130E	1.2	1.4	54	7.8	<1.0	<1.0	<10	19	81	35	<10	<10	<10
	2/15/1996	5.5	140	2	<1.0	56	8.6	2.8	<1.0	<10	<10	<10	<10	<10	<10	<10
	2/16/1996	7.5	100	<1.0	<1.0	64	10	<1.0	<1.0	<10	11	57	11	<10	<10	<10
	2/17/1996	5.7	180E	1.7	2.1	62	9.4	<1.0	<1.0	<10	<10	55	12	<10	<10	8
	2/17/1996	5.5	120	<1.0	<1.0	42	8.4	<1.0	<1.0	<10	<10	<10	<10	<10	<10	<10
	2/22/1996	3.4	150E	1.4	<1.0	52	5.7	<1.0	<1.0	<10	13	<10	13	<10	<10	<10
	2/22/1996	4.9	96	<1.0	<1.0	48	5.5	<1.0	<1.0	<10	<10	<10	<10	<10	<10	<10
	2/28/1996	6.4	200E	1.9	1	19	5.3	<1.0	<1.0	<10	11	<10	7.7	<10	<10	<10
	3/22/1996	4.8	240	<1.0	<1.0	58	<1.0	<1.0	<1.0	<10	<10	<10	<10	<10	<10	<10
	3/2/1996	5.2	130	1.7	<1.0	55	3.8	<1.0	<1.0	<10	<10	<10	<10	<10	<10	8
	4/3/1996	3.6	140E	1.1	1.4	38	5.6	<1.0	<1.0	<10	11	52	<10	<10	<10	<10
	4/3/1996	3	92	<1.0	<1.0	25	3.9	<1.0	<1.0	<10	<10	<10	<10	<10	<10	<10
	5/3/1996	4	130	<1.0	<1.0	38	4.8	<1.0	<1.0	<10	16	58	<10	<10	<10	<10
	6/5/1996	2	110	<1.0	<1.0	52	<1.0	2.8	<1.0	<10	<10	<10	<10	<10	<10	<10
	7/1/1996	2	77	<1.0	<1.0	25	3.6	<1.0	<1.0	<10	<10	<10	<10	<10	<10	3
	8/1/1996	6.1	220	<1.0	<1.0	32	5.7	<1.0	<1.0	<10	11	<10	5.5	<10	<10	10
	11/7/1996	<10	240	<10	<10	54	<10	<10	2100	19	41	9.5	<10	<10	<10	<10
	11/7/1996	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	2/3/1997	<10	100	<10	<10	31	<10	<10	<10	<10	12	31	<10	<10	<10	<10
	2/14/1997	<10	96	<10	<10	16	3.5	<10	<10	<10	<10	58	5.3	<10	<10	<10
	8/7/1997	<10	39	<10	<10	13	2.2	<10	<10	<10	<10	<10	<10	<10	<10	<10
	11/13/1997	<10	88	<10	<10	16	4.2	<10	<10	<10	14.7	25.4	18.1	<10	<10	<10
	2/5/1998	<10	74	<10	<10	18	7.3	<10	<10	<10	42	65	78	<10	<10	34
	3/7/1998	<10	110	<10	<10	24	<10	<10	<10	<10	16	50	38	<10	<10	8.0
	7/9/1998	<10	69	<10	<10	17	<10	<10	<10	<10	18	18	18	18	18	18
	8/7/1998	<10	128	<10	<10	20	6.4	<10	<10	<10	11	50	<10	<10	<10	<10
	11/4/1998	<10	140	<10	<10	21	<10	<10	<10	<10	23	93	41	<10	<10	96
	2/11/1999	<10	75	<10	<10	13	7.8	<10	<10	<10	11	62	<10	<10	<10	8.0
	5/11/1999	<10	118	<10	<10	20	9.4	<10	<10	<10	13	59	7.2	<10	<10	38
	8/5/1999	<10	110	<10	<10	23	5.0	<10	<10	<10	14	64	<10	<10	<10	<10
	11/2/1999	<10	130	<10	<10	26	5.8	<10	<10	<10	13	68	<10	<10	<10	<10
	3/6/2000	<10	64	<10	<10	8.9	<10	<10	<10	<10	14	65	<10	<10	<10	<10
	8/5/2000	<10	82	<10	<10	10	<10	<10	<10	<10	<10	77	<10	<10	<10	<10
	1/18/2001	<10	76	<10	<10	12	<10	<10	<10	<10	<10	118	32	<10	<10	<10
	7/1/2001	10	68	<10	<10	14	9.9	<10	<10	<10	31	119	74	<10	3.3	280
	1/16/2002	<10	82	<10	<10	9.8	<10	<10	<10	<10	<10	93	6.3	<10	<10	<10
	7/1/2002	<10	220	<10	<10	21	<10	<10	<10	<10	<10	54	<10	<10	<10	<10
	1/28/2003	NOT SAMPLED	SYSTEM DOWN	NOT SAMPLED	SYSTEM DOWN	NOT SAMPLED	SYSTEM DOWN	NOT SAMPLED	SYSTEM DOWN	NOT SAMPLED	SYSTEM DOWN	NOT SAMPLED	SYSTEM DOWN	NOT SAMPLED	SYSTEM DOWN	NOT SAMPLED
	7/10/2003	<10	160	<10	<10	14	5.7	<10	<10	<10	91	6.1	<10	<10	<10	<10
	1/13/2004	5.8	98	<10	<10	5.5	34	<10	<10	<10	<10	32	<10	<10	<10	9
	6/22/2004	6.6	120	<10	<10	7.9	19	<10	<10	<10	10	54	<10	<10	<10	<10
Remediation Performance S		3500	7	70	1	100	2.1	1000	400	3500	50	1000	50	5000	15	

Fourth Five-Year Review  
Charles Macon Lagoon and Drum Storage  
Cordova, Richmond County, NC

**TABLE 7**  
**Influent Analytical Results**  
**Upper Dockery**  
**Macon/Dockery Site**  
**Richmond County, North Carolina**

Sample Location	Date	1,1-Dichloroethane (ug/L)	1,1-Dichloroethene (ug/L)	Chloro-1,2-Dichloroethane (ug/L)	Tetrahaloethene (ug/L)	1,1,1-Trichloroethane (ug/L)	Trichloroethene (ug/L)	Toluene (ug/L)	Total Xylenes (ug/L)	Aroclor (ug/L)	Chromat (ug/L)	Benzen (ug/L)	Manganese (ug/L)	Zinc (ug/L)	Lead (ug/L)	Suspended Solids (mg/L)
	1/27/2005	10	73	7.3	<1.0	4.8	28	<1.0	<1.0	<10	<10	48	<5.0	<10	<1.0	<1.0
	2/22/2005	13	46	8.7	<1.0	2.6	28	<1.0	<1.0	<10	11	70	<5.0	<10	NA	<1.0
	1/28/2006	41.0	92	7.5	<1.0	5.4	18	<1.0	<1.0	<10	2.4	89	<5.0	<10	<1.5	<1.0
	8/2/2006	15	94	13	<1.0	4.3	33	<1.0	<1.0	<10	7.3	100	13	<10	<1.5	5.0
	1/28/2007	10	68	6.1	<1.0	4.2	15	<1.0	<1.0	<10	10	82	<5.0	<10	<1.5	<1.0
	7/25/2007	7.4	19	4.7	<1.0	1.2	8.1	<1.0	<1.0	<10	11	81	<5.0	<10	<1.5	<1.0
	2/3/2008	6.3	43	3.7	<1.0	2.3	7.3	<1.0	<1.0	<10	64	72	8.3	<10	<1.5	9.0
	8/25/2008	5.4	33	3.9	<1.0	1.6	6.7	<1.0	<1.0	<10	11	75	<5.0	<10	<1.5	<1.0
	2/19/2009	11	39	18	<1.0	1.7	16.0	<1.0	<1.0	<10	11	61	9.3	<10	<1.5	<1.0
	8/13/2009	8.5	40	7.2	<1.0	1.6	8.0	<1.0	<1.0	<10	8.9	76	<5.0	<10	<1.5	<1.0
	1/29/2010	32	34	18	<1.0	1.1	44	<1.0	<1.0	<10	11	75	19	<10	<1.5	<1.0
	18/19/2010	5.3	69	3.1	<1.0	3.3	5.0	<1.0	<1.0	<10	11	77	<5.0	<10	<1.5	5.5
	1/31/2011	4.5	52	2.6	<1.0	2.5	4.1	<1.0	<1.0	<10	10	69	<5.0	<10	<1.5	<1.0
	8/18/2011	2.3	64	<1.0	<1.0	3.3	<1.0	<1.0	<1.0	<10	7.2	65	<5.0	<10	<1.5	<1.0
	2/22/2012	3.8	46	2.2	<1.0	2.2	3.8	<1.0	<1.0	<10	11	83	<5.0	<10	<1.5	<1.0
	8/1/2012	System	Down	Not	Sampled	1.9	4.8	<1.0	<1.0	<10	10	85	5.3	<10	<1.5	<1.0
	4/5/2013	4.5	41	2.9	<1.0	1.9	4.8	<1.0	<1.0	<10	10	85	5.3	<10	<1.5	<1.0
	9/9/2013	4.3	48	4.9	<1.0	2.2	5.1	<1.0	<1.0	<10	12	87	<5.0	<10	<1.5	<1.0
	4/18/2014	4.8	58	3.2	<1.0	2.7	4.8	<1.0	<1.0	<10	<5.0	42	<5.0	<10	<1.5	<1.0
	8/14/2014	3.2	198	<1.0	<1.0	3.0	2.1	<1.0	<1.0	<10	<5.0	44	<5.0	<10	6.8	<1.0
Remediation Performance B		3500	7	70	1	200	2.8	1000	400	3500	50	1000	50	5000	15	

Fourth Five-Year Review  
Charles Macon Lagoon and Drum Storage  
Cordova, Richmond County, NC

**TABLE 8**  
**Influent Analytical Results**  
**Lower Dockery**  
**Macon/Dockery Site**  
**Richmond County, North Carolina**

Sample Location	Date	Chlorobenzene (ug/L)	1,1-Dichloroethane (ug/L)	1,1-Dichloroethene (ug/L)	Chloro-1,2-Dichloroethane (ug/L)	Methylene chloride (ug/L)	1,1,1-Trichloroethane (ug/L)	Trichloroethene (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Total Xylenes (ug/L)	Chlorobenzene (ug/L)	Bromobenzene (ug/L)	Monoaromatics (ug/L)	Zinc (ug/L)	Cadmium (ug/L)	Suspended Solids (ug/L)
LD Influent	2/13/1996	1.1	89	33	<1.0	<2.0	46	6.4	<2.0	17	<1.0	<10	<50	260	270	<0.10	<5.0
	2/14/1996	1.3	102E	43	<1.0	<2.0	37	8.6	<2.0	8.3	<1.0	<10	<50	250	120	<0.10	<5.0
	2/14/1996	<1.0	88	13	<1.0	<2.0	15	<5.0	<2.0	<1.0	<10	<50	<5.0	<10	<20	<0.10	<5.0
	2/14/1996	1.6	94E	39	1.8	1.7	39	9	<2.0	8.3	<1.0	<10	<50	240	110	<0.10	<5.0
	2/14/1996	<1.0	64	16	2.2	2.5	18	6.6	<2.0	6.5	<1.0	<10	<50	<5.0	<20	<0.10	<5.0
	2/15/1996	1.2	83	22	1.7	<2.0	29	8.4	<2.0	5.3	<1.0	<10	<50	200	84	<0.10	<5.0
	2/16/1996	3.3	99	33	2.6	<2.0	31	8.7	<2.0	4.3	<1.0	<10	<10	190	81	<0.10	<5.0
	2/22/1996	2.5	5.8	100	<1.0	<2.0	34	5.2	1.8	13	3.4	14	<50	240	240	<0.10	<5.0
	2/28/1996	1.2	93E	33	<1.0	<2.0	38	7.4	<2.0	1.3	<1.0	<10	<50	120	77	<0.10	8
	3/28/1996	<1.0	92	25	<1.0	<2.0	39	6.4	<2.0	<1.0	<10	<50	<5.0	<20	<0.10	<5.0	
	3/5/1996	2	110	47	<1.0	<2.0	34	6.7	<2.0	<1.0	<10	<50	92	30	<0.10	<5.0	
	4/3/1996	<1.0	79	36	<1.0	<2.0	28	6.6	<2.0	<1.0	<10	<50	160	39	<0.10	<5.0	
	5/3/1996	<1.0	71	30	1.7	<2.0	40	5.4	<2.0	<1.0	<10	16	63	200	0.91	<0.10	<5.0
	6/5/1996	<1.0	67	32	1.1	1	42	5.2	<2.0	2.5	<1.0	<10	<50	230	46	<0.10	<5.0
	8/1/1996	<2.0	83	27	<4.0	<2.0	34	5.9	<2.0	<4.0	<1.0	<10	<50	110	<20	<0.10	5
	11/7/1996	<2.0	89	28	<2.0	<4.0	38	5.8	<2.0	<4.0	<1.0	<10	<50	230	<20	<0.10	<5.0
	3/12/1997	<5.0	66	21	<5.0	<10	23	<5.0	<5.0	<15	<10	<50	76	<20	<0.10	<5.0	
	5/14/1997	<1.0	62	25	<1.0	<2.0	33	6.3	<1.0	<1.0	<10	<50	150	<20	<0.10	<5.0	
	8/7/1997	<1.0	47	15	<1.0	<2.0	18	4.1	<1.0	<1.0	<10	<50	130	<20	<0.10	<5.0	
	11/13/1997	<1.0	33	13	<1.0	<1.0	12	3.3	<1.0	<1.0	<10	<50	200	<20	<1	<5.0	
	2/5/1998	<1.0	34	7.4	<1.0	<2.0	14	2.5	<1.0	<1.0	<10	<50	340	<20	<0.10	71	
	5/7/1998	<1.0	32	8.2	<1.0	<2.0	13	3.6	<1.0	<1.0	<10	<50	340	<20	<0.10	<5.0	
	8/7/1998	<1.0	39	7.6	<1.0	<2.0	13	2.6	<1.0	<1.0	<10	<50	210	<20	<0.10	<5.0	
	11/4/1998	<1.0	34	7.3	<1.0	<2.0	9.4	1.9	<1.0	<1.0	<10	<50	270	<20	<0.10	37	
	2/11/99	<1.0	22	4.6	<1.0	<2.0	6.8	1.8	<1.0	<1.0	<10	<50	280	<20	<0.10	<5.0	
	5/12/1999	<1.0	29	5.9	<1.0	<2.0	11	2.0	<1.0	<1.0	<10	<50	190	<20	160	<5.0	<5.0
	8/5/1999	<1.0	22	3.6	<1.0	<2.0	18	1.3	<1.0	<1.0	<10	<50	41	<20	<0.10	<5.0	
	11/2/1999	<1.0	14	2.6	<1.0	<2.0	4.4	1.0	<1.0	<1.0	<10	<50	140	<20	<0.10	<5.0	
	5/9/2000	<1.0	20	2.9	<1.0	<2.0	7.4	<1.0	<1.0	<1.0	<10	<50	70	<20	<0.10	<5.0	
	8/3/2000	<1.0	23	2.5	<1.0	<2.0	12	<1.0	<1.0	<1.0	<10	<50	180	<20	<0.10	<5.0	
	1/18/2001	**	System	Down	Not	Sampled	**	**	System	Down	System	Down	Not	Sampled	**	**	**
	7/1/2001	**	System	Down	Not	Sampled	**	**	System	Down	System	Down	Not	Sampled	**	**	**
	9/1/2001	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<50	<5	<20	<0.10	<5.0
	1/16/2002	System	Down	Not	Sampled	System	Down	System	Down	System	Down	Not	Sampled	System	Down	Not	Sampled
	7/3/2002	System	Down	Not	Sampled	System	Down	System	Down	System	Down	Not	Sampled	System	Down	Not	Sampled
	1/28/2003	System	Down	Not	Sampled	System	Down	System	Down	System	Down	Not	Sampled	System	Down	Not	Sampled
	3/14/2003	<1.0	18	4.5	<1.0	<2.0	5.1	1.1	<1.0	<1.0	<10	<50	200	<20	<0.10	<5.0	
	7/9/2003	<1.0	8.9	<1.0	<1.0	<1.0	1	<1.0	<1.0	<1.0	<10	<50	170	<20	<0.10	<5.0	
	1/13/2004	<1.0	6.5	<1.0	<2.0	<5.0	<1.0	<1.0	<1.0	<2.0	<10	<50	76	<20	<0.10	13	
	6/28/2004	System	Suspended	Not	Sampled	System	Suspended	System	Suspended	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled
	1/27/2005	System	Suspended	Not	Sampled	System	Suspended	System	Suspended	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled
	8/25/2005	System	Suspended	Not	Sampled	System	Suspended	System	Suspended	System	Suspended	Not	Sampled	System	Suspended	Not	Sampled

Remediation Performance SV

NA - Not Analyzed  
ug/L - micrograms per liter  
DUP - Duplicate



*Fourth Five-Year Review  
Charles Macon Lagoon and Drum Storage  
Cordova, Richmond County, NC*

**TABLE 8  
Influent Analytical Results  
Lower Dockery  
Macon/Dockery Site  
Richmond County, North Carolina**

Sample Location	Date	Chloroform (ug/L)	1,1 - Dichloroethane (ug/L)	1,1 - Dichloroethene (ug/L)	Chloroform-1,2-Dichloroethane (ug/L)	Methylene chloride (ug/L)	1,1,1-Trichloroethane (ug/L)	Trichloroethene (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Total Xylenes (ug/L)	Chlorobenzene (ug/L)	Bromobenzene (ug/L)	Manganese (ug/L)	Zinc (ug/L)	Cadmium (ug/L)	Suspended Solids (mg/L)
	1/18/2004		System	Suspended	Not	Sampled				System	Suspended		Not	Sampled			
	8/2/2004		System	Suspended	Not	Sampled				System	Suspended		Not	Sampled			
	1/27/2007		System	Suspended	Not	Sampled				System	Suspended		Not	Sampled			
	7/26/2007		System	Suspended	Not	Sampled				System	Suspended		Not	Sampled			
	2/3/2008		System	Suspended	Not	Sampled				System	Suspended		Not	Sampled			
	8/13/2008		System	Suspended	Not	Sampled				System	Suspended		Not	Sampled			
	2/19/2009		System	Suspended	Not	Sampled				System	Suspended		Not	Sampled			
	8/13/2009		System	Suspended	Not	Sampled				System	Suspended		Not	Sampled			
	1/29/2010		System	Suspended	Not	Sampled				System	Suspended		Not	Sampled			
	1/31/2011		System	Suspended	Not	Sampled	Future	Sample	Collected	System	Suspended		Not	Sampled			
Remediation Performance St		1	3500	7	70	5	200	11	1	1000	400	50	1000	50	5000	5	

NA - Not Analyzed  
ug/L - micrograms per liter  
DUP - Duplicates

Fourth Five-Year Review  
Charles Macon Lagoon and Drum Storage  
Cordova, Richmond County, NC

TABLE 8  
Influent Analytical Results  
Upper Macon Storage Area  
Reservoir/Drainage Site  
Richmond County, North Carolina

Sample Location	Date	Chloroform (ug/L)	1,1-Dichloro-ethane (ug/L)	1,1-Dichloro-ethene (ug/L)	Chloro-1,2-Dichloro-ethane (ug/L)	Trichloro-ethene (ug/L)	1,1,1-Trichloro-ethene (ug/L)	Trichloro-ethane (ug/L)	Vinyl chloride (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Chromium (ug/L)	Barium (ug/L)	Manganese (ug/L)	Zinc (ug/L)	Calcium (ug/L)	Lead (ug/L)	Mercury (ug/L)	Suspended Solids (mg/L)
UMSA Influent	2/13/1996	<1.0	15	14	19	14	5.9	25	<1.0	<1.0	1.9	<10	140	308	55	<30	3.5	<2	21
	2/14/1996	1.1	14	11	10	7.3	7.2	10	<1.0	1.5	<1.0	<10	110	180	<20	<30	<1.0	<2	<5.0
	2/14/1996	<1.0	11	14	11	17	6.1	17	<1.0	1	<1.0	<10	110	160	20	<30	<1.0	<2	<5.0
	2/15/1996	<1.0	12	14	11	18	5.9	16	<1.0	1.3	1	<10	100	140	<20	<30	<1.0	<2	<5.0
	2/16/1996	<1.0	7.5	21	17	14	9.7	25	<1.0	<1.0	<1.0	<10	120	140	<20	<30	<1.0	0.22	<5.0
	2/17/1996	<1.0	9.7	18	16	11	7	24	<1.0	<1.0	<1.0	<10	110	110	<20	<30	<1.0	<2	<5.0
	2/22/1996	1.1	10	17	16	15	7.6	25	<1.0	<1.0	<1.0	<10	120	65	<20	<30	<1.0	<2	<5.0
	2/28/1996	<1.0	9.8	16	13	12	5.8	21	<1.0	<1.0	<1.0	<10	130	52	<20	<30	<1.0	<2	7
	3/8/1996	<1.0	7.6	10	10	7.7	6.1	16	<1.0	<1.0	<1.0	<10	130	41	<20	<30	<1.0	<2	<5.0
	4/3/1996	<1.0	5.5	16	8.5	7.4	5.4	18	<1.0	<1.0	<1.0	<10	110	27	<20	<30	0.2	<2	<5.0
	5/3/1996	<1.0	4.8	12	6.9	5.7	<1.0	12	<1.0	<1.0	<1.0	<10	97	21	<20	<30	<1.0	<2	<5.0
	6/5/1996	<1.0	8.7	22	6	<1.0	8	13	1.1	<1.0	3.6	<10	130	19	<20	<30	<1.0	<2	5
	7/1/1996	<1.0	3.8	11	6.9	4.8	4.3	12	<1.0	<1.0	<1.0	11	110	13	<20	<30	<1.0	NA	5
	7/8/1996	<1.0	7.9	15	10	6.4	4.2	13	4.5	<1.0	<1.0	<10	130	13	<20	<30	<1.0	NA	6
	11/7/1996	<1.0	7.2	9.2	7.5	2.3	3.4	10	2	<1.0	1	<10	140	9.8	<20	<30	<1.0	NA	10
	2/4/1997	<1.0	3.0	27	7.8	3.3	1.8	15	<1.0	<1.0	<1.0	<10	150	24	<20	<30	<1.0	NA	36
	(DUP) 2/4/1997	<1.0	2.4	25	6.2	1.8	7.9	14	<1.0	<1.0	<1.0	<10	140	17	<20	<30	<1.0	NA	<5.0
	(DUP) 5/12/1997	<1.0	3.8	26	16	8.9	5	22	<1.0	<1.0	<1.0	<10	120	46	<20	<30	<1.0	NA	<5.0
	5/22/1997	<1.0	4.6	21	16	8.2	3.7	18	<1.0	<1.0	<1.0	<10	150	55	<20	<30	<1.0	NA	5
	8/7/1997	<1.0	11.0	55	23	12	6.9	17	<1.0	<1.0	<1.0	34	210	95	<20	<30	7.4	NA	NA
11/13/1997	<2.0	4.8	72	12	8.7	12	13	<2.0	<2.0	<1.0	139	<5.0	<20	<1	<3.0	NA	NA	<5.0	
2/5/1998	<2.0	12.0	110	21	11	24	17	6.6	<2.0	<2.0	<10	190	16	<20	<30	<1.0	NA	<5.0	
3/7/1998	<2.0	11.0	67	13	13	16	11	6.6	<2.0	<2.0	<10	190	50	<20	<30	<1.0	NA	<5.0	
8/7/1998	<10	<10	130	<10	<20	22	<10	<10	<10	<10	<10	180	34	<30	<30	<1.0	NA	<5.0	
11/4/1998	<10	<10	180	<10	<10	23	<10	<10	<10	<10	<10	180	22	<20	<30	<1.0	NA	5	
2/11/1999	<10	16	370	13	36	57	14	<10	<10	<10	<10	200	25	<20	<30	<1.0	NA	<5.0	
5/13/1999	<25	<25	380	<25	<25	61	<25	<25	<25	<25	<10	140	14	<20	31	<30	<1.0	NA	<5.0
8/21/1999	<25	<25	490	<25	<25	78	<25	<25	<25	<25	<10	140	12	<20	<30	5.9	NA	<5.0	
11/2/1999	<25	<25	480	<25	<25	69	<25	<25	<25	<25	<10	180	13	<20	<30	<1.0	NA	<5.0	
2/14/2000	<2.0	59	32	37	<2.0	2.5	34	<2.0	<2.0	<10	290	53	<20	<30	<1.0	NA	<5.0		
5/8/2000	<10	18	110	36	<10	<10	<10	<10	<10	<10	350	76	<20	<30	<1.0	NA	<5.0		
8/22/2000	<10	<10	480	<10	<10	49	34	<10	<10	<10	170	13	<20	<30	<1.0	NA	<5.0		
11/8/2001	<10	<10	75	10	<10	<10	18	<10	<10	<10	98	<5.0	<20	<30	<1.0	NA	<5.0		
7/11/2001	<25	44	330	57	28	42	26	<25	<25	<25	<10	300	<1.0	<20	<30	<1.0	NA	<5.0	
1/15/2002	<25	<25	570	40	27	25	<25	<25	<25	<25	<10	340	5.2	<20	<30	<1.0	NA	<5.0	
7/8/2002	<25	<25	420	52	<25	<25	<25	<25	<25	<25	<10	340	<5.0	<20	<30	<1.0	NA	<5.0	
1/28/2003	NOT SAMPLED			SYSTEM DOWN					NOT SAMPLED			SYSTEM DOWN							
3/14/2003	<25	<25	530	73	40	<25	<25	<25	<25	<25	<10	340	<5.0	<20	<30	<1.0	<0.20	<5.0	
7/10/2003	<2.0	14	40	4.7	<2.0	<2.0	1.3	<2.0	<2.0	<2.0	<10	370	95	94	<20	<30	<1.0	NA	<5.0
1/13/2004	<10	<10	160	28	16	<10	<10	<10	<10	<10	<10	160	<5.0	<20	<30	<1.0	NA	7	
6/28/2004	<10	<10	180	22	13	<10	<10	<10	<10	<10	<10	180	<5.0	<20	<30	<1.0	NA	<5.0	

Maximum Performance Based:

NA - Not Analyzed  
ug/L - micrograms per liter  
DUP - Duplicate

Fourth Five-Year Review  
Charles Macon Lagoon and Drum Storage  
Cordova, Richmond County, NC

TABLE 8  
Inflow Analytical Results  
Upper Macon Source Area  
Macon/Decatur Site  
Richmond County, North Carolina

Sample Location	Date	Chloroform (ug/L)	1,1-Dichloroethane (ug/L)	1,1-Dichloroethene (ug/L)	Chlorine-1,2-Dichloroethane (ug/L)	Tetrahydroethene (ug/L)	1,1,1-Trichloroethane (ug/L)	Trichloroethene (ug/L)	Vinyl chloride (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Chlorobenzene (ug/L)	Barium (ug/L)	Manganese (ug/L)	Zinc (ug/L)	Cadmium (ug/L)	Lead (ug/L)	Mercury (ug/L)	Suspended Solids (mg/L)	
LMSA Inflow	1/27/2005	<1.0	9.9	56	20	20	4.8	8.5	1.3	<1.0	<1.0	<1.0	208	10	<28	<0.38	<5.0	NA	<5.0	
	8/25/2005	<1.0	18	55	16	12	3.1	9.3	<1.0	<1.0	<1.0	<1.0	130	<5.0	<20	<0.38	NA	NA	6.0	
	1/28/2006	<1.0	17	87	17	22	3.9	7.0	<1.0	<1.0	<1.0	5.7	176	6.7	<25	<0.38	<1.5	NA	<5.0	
	8/22/2006	<1.0	7.6	71	13	13	2.6	5.2	<1.0	<1.0	<1.0	41	320	5.8	22	<0.38	5.5	NA	7.0	
	1/28/2007	<2.0	6.6	49	15	18	2.8	6.0	<2.0	<2.0	<2.0	8.3	160	106	<20	NA	<1.5	NA	<5.0	
	7/28/2007	<1.0	8.8	68	12	12	2.5	4.9	<1.0	<1.0	<1.0	6.3	220	27	<20	<0.30	<1.5	NA	7.8	
	2/3/2008	<1.0	6.5	51	13	18	1.8	5.2	<1.0	<1.0	<1.0	<5.0	176	<5.0	<20	<0.50	<1.5	NA	<5.0	
	8/23/2008	<1.0	7.5	35	10	8.0	1.1	4.3	<1.0	<1.0	<1.0	7.7	176	76	<20	<0.50	1.8	NA	31	
	2/19/2009	<1.0	5.2	36	11	10.0	1.1	6.1	<1.0	<1.0	<1.0	<5.0	138	7.8	<20	<0.50	1.5	<0.20	<5.0	
	8/13/2009	<1.0	6.4	28	9.0	7.1	<1.0	4.4	<1.0	<1.0	<1.0	5.1	158	19	<20	<0.50	<1.5	NA	<5.0	
	1/29/2010	<1.0	6.7	9.7	3.1	6.0	<1.0	1.3	<1.0	<1.0	<1.0	2.2	181	12	<20	<0.50	<1.5	NA	<5.0	
	10/14/2010	<1.0	8.5	64	8.8	2.9	1.4	2.9	<1.0	<1.0	<1.0	6.2	280	7.7	<20	6.2	<1.5	NA	<5.0	
	1/31/2011	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	9/19/2011	<1.0	3.2	4.4	1.5	4.4	<1.0	<1.0	<1.0	<1.0	<1.0	13	160	118	<20	<0.50	<1.5	NA	<5.0	
	2/22/2012	<1.0	10	2.8	6.9	1.8	<1.0	1.8	<1.0	<1.0	<1.0	6.9	285	5.0	<20	<0.20	<1.5	NA	1.5	
	8/21/2012	<1.0	13	<1.0	6.8	1.1	<1.0	1.5	<1.0	<1.0	<1.0	6.4	248	<5.0	<20	<0.50	<1.5	NA	<5.0	
	4/5/2013	<1.0	9.9	1.8	4.3	1.1	<1.0	1.8	<1.0	<1.0	<1.0	6.1	250	<5.0	<20	<0.50	<1.5	<0.20	<5.0	
9/9/2013	<1.0	4.4	1.2	2.4	2.7	<1.0	1.1	<1.0	<1.0	<1.0	<5.0	188	990	27	<5.0	<1.5	<0.20	10		
4/10/2014	<1.0	1.5	<1.0	1.8	2.1	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	108	65	<20	<0.50	<1.5	<0.20	<5.0		
8/14/2014	<1.0	<1.0	<1.0	<1.0	3.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0	34	27	43	<0.50	<1.5	<0.20	10	

Remediation Performance Standard

NA - Not Analyzed  
ug/L - micrograms per liter  
DUP - Duplicate

Fourth Five-Year Review  
Charles Macon Lagoon and Drum Storage  
Cordova, Richmond County, NC

TABLE 10  
Influent Analytical Results  
Upper/Lower Macon System  
Macon Dockery Site  
Richmond County, North Carolina

Sample Location	Date	Chloro-Form (ug/L)	1,1-Dichloro-ethene (ug/L)	1,1-Dichloro-ethane (ug/L)	Carbon Tetrachloride (ug/L)	Methylene chloride (ug/L)	Tetrachloro-ethene (ug/L)	1,1,1-Trichloro-ethene (ug/L)	Trichloro-ethene (ug/L)	Toluene (ug/L)	Chromium (ug/L)	Boron (ug/L)	Manganese (ug/L)	Zinc (ug/L)	Cadmium (ug/L)	Lead (ug/L)	Segregated Solids (ug/L)	
UM Influent	2/22/1996	6	4.1	1.6	5.8	<1.0	4.8	<1.0	12	15	<10	<50	36	120	<0.30	4.8	<5.0	
	2/23/1996	3	4.5	1.6	6.4	<1.0	4.8	<1.0	12	12	<10	<50	31	110	<0.30	4.5	<5.0	
	2/24/1996	1.4	4.6	1.8	6.4	<1.0	6	<1.0	14	9.7	<10	<50	30	110	<0.30	3.6	<5.0	
	2/25/1996	1.2	<1.0	2.2	6.6	<1.0	6.9	<1.0	15	9.2	<10	<50	28	110	<0.30	3.4	<5.0	
	2/28/1996	3.5	5.8	1.4	8.6	<1.0	5	<1.0	14	2.9	<10	<50	19	48	<0.30	<1.0	<5.0	
	3/8/1996	<1.0	4.7	1	7.6	<1.0	5.8	<1.0	12	<1.0	<10	<50	13	20	<0.30	<1.0	<5.0	
	3/16/1996	<1.0	5.5	1.8	9.2	<1.0	4.4	<1.0	12	<1.0	<10	<50	20	30	<0.30	<1.8	<5.0	
	4/3/1996	<1.0	4.4	1.6	6.0	<1.0	4	<1.0	10	<1.0	<10	<50	9.3	26	<0.30	1	10	
	6/5/1996	<1.0	4.9	1.8	7.7	<1.0	<1.0	<1.0	9.8	3.2	<10	<50	<5.0	22	<0.30	<1.0	13	
	7/11/1996	<1.0	3.8	1.1	6.1	<1.0	3.3	<1.0	7.6	<1.0	<10	<50	<5.0	<20	<0.30	<1.0	<5.0	
	7/20/1996	<1.0	4.1	2.1	8.6	<1.0	3.3	<1.0	9.8	<1.0	<10	<50	<5.0	<20	<0.30	<1.8	<5.0	
	11/7/1996	<1.0	5.3	1.9	6.6	<1.0	2.3	<1.0	8.3	<1.0	<10	<50	<5.0	<20	<0.30	<1.8	<5.0	
	2/4/1997	<1.0	5.5	1.6	7	<1.0	2.5	<1.0	8.2	<1.0	<10	<50	36	<5.0	<20	<0.30	<1.0	<5.0
	5/12/1997	<1.0	11	2.5	1.8	<1.0	<1.0	4.5	4.1	<1.0	<10	<50	12	<20	<0.30	<1.8	<5.0	
	8/7/1997	<1.0	5.8	1.8	7	<1.0	2.1	<1.0	8.1	<1.0	<10	<50	7.2	<20	<0.30	<1.0	NA	
	11/13/1997	<1.0	5.3	1.1	3.9	<1.0	1.6	<1.0	3.9	<1.0	<10	<50	28.7	<20	<0.30	<1.0	<5.0	
	2/5/1998	<1.0	6.9	1.6	6.7	<1.0	1.1	<1.0	5.9	<1.0	<10	<50	8.4	<20	<0.30	<1.0	5	
	5/7/1998	<1.0	5	1.8	5.6	<1.0	2.5	<1.0	5.8	<1.0	<10	<50	16	<20	<0.30	<1.0	<5.0	
	8/7/1998	<1.0	3.6	1.6	6.4	<1.0	1.2	<1.0	6.2	<1.0	<10	<50	13	<20	<0.30	<1.0	<5.0	
	11/4/1998	<1.0	2.9	1.4	3.7	<1.0	<1.0	<1.0	3.6	<1.0	<10	<50	5.2	<20	<0.30	<1.8	<5.0	
	2/11/1999	<1.0	4.3	3	5.1	<1.0	1	<1.0	4.4	<1.0	<10	<50	14	<20	<0.30	<1.8	<5.0	
	5/12/1999	<1.0	4.4	3.4	8.1	<1.0	1.6	<1.0	5.3	<1.0	<10	<50	11	<20	48	<1.8	<5.0	
	8/5/1999	<1.0	4.1	3.3	6.5	<1.0	1.3	<1.0	4.2	<1.0	<10	<50	<5.0	<20	<0.30	7.2	<5.0	
	11/2/1999	<1.0	4.2	3.6	6.1	<1.0	1.5	1	4.2	<1.0	<10	<50	<5.0	<20	<0.30	<1.8	<5.0	
	2/16/2000	<1.0	3	3.1	4.0	<1.0	1.2	<1.0	2.8	<1.0	<10	<50	<5.0	<20	<0.30	<1.8	<5.0	
	5/6/2000	<1.0	3.9	10	6.3	<1.0	2.3	1.4	3.2	<1.8	<10	<50	<5.0	<20	<0.30	<1.8	<5.0	
	8/23/2000	<1.0	4.5	16	8.7	<1.0	4.2	2.6	5.6	<1.8	<10	<50	<5.0	<20	<0.30	<1.0	<5.0	
	1/18/2001	***	Not Sampled			System Down		***	***		Not Sampled							System Down
	7/11/2001	<5.0	9.7	37	7.6	<10	7.3	8.6	6.7	<5.0	<10	<50	13	<20	<0.30	<1.8	<5.0	
	1/15/2002	<2.0	2.6	32	7.4	<4.0	6.5	4	3.9	<2.0	<10	<50	13	<20	<0.30	<1.0	<5.0	
	7/31/2002	Not Sampled				System Down					Not Sampled							System Down
1/28/2003	<1.0	<1.0	19	1.2	<1.0	2.8	1.8	<1.0	<1.0	<10	<50	19	<20	<0.30	<1.0	28		
7/18/2003	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<50	<5.0	22	<0.30	<1.0	<5.0		
1/13/2004	<5.0	<5.0	49	<10	<2.0	8.4	<5.0	<5.0	<5.0	<10	<50	5	<20	<0.30	<1.0	16		
6/25/2004	Not Sampled				System Down					Not Sampled							System Down	
Emergency Performance St	1	3500	7	70	3	1	280	2.8	1000	50	1000	50	5000	5	13			

NA - Not Analyzed  
ug/L - micrograms per liter  
DUP - Duplicate

Fourth Five-Year Review  
Charles Macon Lagoon and Drum Storage  
Cordova, Richmond County, NC

**TABLE 10**  
Influent Analytical Results  
Upper/Lower Macon System  
Macon Dockery Site  
Richmond County, North Carolina

Sample Location	Date	Chloro-form (ug/L)	1,1-Dichloroethane (ug/L)	1,1,1-Trichloroethane (ug/L)	1,1,2-Dichloroethane (ug/L)	Methylene chloride (ug/L)	Tetrachloroethane (ug/L)	1,1,1-Trichloroethane (ug/L)	Trichloroethane (ug/L)	Toluene (ug/L)	Chlorobenzene (ug/L)	Benzene (ug/L)	Manganese (ug/L)	Zinc (ug/L)	Cadmium (ug/L)	Lead (ug/L)	Suspended Solids (ug/L)	
Upt Influent	1/27/2002	<1.0	3.0	7.5	4.8	<2.0	14	4.5	4.4	<1.0	<1.0	<5.0	<5.0	<2.0	<0.30	<3.0	<5.0	
	1/25/2005	<1.0	4.3	51	5.1	<2.0	9.6	3.6	3.4	<1.0	<5.0	34	<5.0	<2.0	<0.30	NA	<5.0	
	1/29/2006	<1.0	3.2	38	6.0	<2.0	8.3	2.3	2.8	<1.0	<5.0	39	<5.0	<2.0	<0.30	<1.5	<5.0	
	8/2/2006	<1.0	3.9	53	5.2	<2.0	9.3	2.7	3.0	<1.0	<5.0	46	<5.0	<2.0	<0.30	<1.5	<5.0	
	1/22/2007	<1.0	4.4	99	7.1	<2.0	13	4.3	5.2	<1.0	<5.0	43	8.6	<2.0	NA	<1.5	<5.0	
	7/29/2007	<1.0	3.8	84	3.6	<2.0	13	3.3	2.8	<1.0	<5.0	49	<5.0	<2.0	<0.30	<1.5	<5.0	
	3/2/2008	<1.0	4.1	66	4.8	<2.0	12	2.7	2.8	<1.0	<5.0	44	<5.0	<2.0	<0.30	<1.5	5.8	
	8/13/2008	<1.0	5.3	98	8.5	<2.0	16	3.0	4.1	<1.0	<5.0	47	<5.0	<2.0	<0.30	<1.5	<5.0	
	2/19/2009	<1.0	3.8	71	4.9	<2.0	12	1.7	2.6	<1.0	<5.0	40	<5.0	<2.0	<0.30	<1.5	<5.0	
	8/13/2009	<1.0	3.0	43	3.9	<2.0	8.4	1.3	2.3	<1.0	<5.0	32	<5.0	<2.0	<0.30	<1.5	5.5	
	1/29/2010	Met	Sampled			System	Down			Met	Sampled				System	Down		
	10/19/2010	<1.0	3.4	65	4.5	<2.0	6.2	1.8	2.1	<1.0	<5.0	35	<5.0	<2.0	<0.30	<1.5	<5.0	
	1/31/2011	Met	Met	Met	Met	Met	Met	Met	Met	Met	Met	Met	Met	Met	Met	Met	Met	Met
	6/16/2011	<1.0	1.5	16	1.3	<2.0	4.4	<1.0	<1.0	<1.0	<5.0	70	5.8	<2.0	<0.30	1.7	7.0	
	2/23/2012	<1.0	12	28	4.3	<2.0	13	1.5	2.6	<1.0	<5.0	53	<5.0	<2.0	<0.30	<1.5	<5.0	
	8/1/2012	System	Down	Met	Sampled													
	4/5/2013	<1.0	5.3	15	6.5	<2.0	7.5	1.1	2.5	<1.0	<5.0	122	<5.0	<2.0	<0.30	<1.5	<5.0	
	9/9/2013	<1.0	1.7	14	1.5	<2.0	3.6	<1.0	<1.0	<1.0	<5.0	61	<5.0	<2.0	<0.30	6.3	5.0	
	4/19/2014	<1.0	3.5	20	5.8	<2.0	5.9	1.5	1.2	<1.0	<5.0	105	<5.0	<2.0	<0.30	<1.5	<5.0	
	8/14/2014	<1.0	2.3	61	1.3	<2.0	20	1.3	1.4	<1.0	<5.0	91	44	130	<0.30	11	23	
Exceedance Performance St		1	3500	7	70	5	1	200	2.8	1000	50	1000	50	3000	5	15		

NA - Not Analyzed  
ug/L - micrograms per liter  
DUP - Duplicate

Fourth Five-Year Review  
Charles Macon Lagoon and Drum Storage  
Cordova, Richmond County, NC

TABLE 10  
Influent Analytical Results  
Upper/Lower Macon System  
Macon Dockery Site  
Richmond County, North Carolina

Sample Location	Date	Chloro-form (ug/L)	1,1-Dichloro-ethane (ug/L)	1,1,1-Trichloro-ethane (ug/L)	1,1,2-Dichloro-ethane (ug/L)	Methylene chloride (ug/L)	Tetrachloro-ethane (ug/L)	1,1,1-Trichloro-ethane (ug/L)	Trichloro-ethane (ug/L)	Toluene (ug/L)	Chlorobenzene (ug/L)	Benzene (ug/L)	Magnesium (ug/L)	Zinc (ug/L)	Cadmium (ug/L)	Lead (ug/L)	Suspended Solids (ug/L)	
UK Influent	2/23/1996	14	26	8.1	4.4	<2.0	2.1	14	3.3	19	<10	77	120	126	<0.30	2.3	<5.0	
	2/23/1996	13	29	11	4.9	<2.0	2.1	15	3.6	18	<10	81	140	130	<0.30	5	<5.0	
	2/24/1996	8.9	30	13	4.9	<2.0	2.7	17	4.5	17	<10	86	160	160	<0.30	4.4	<5.0	
	2/25/1996	8.2	31	13	5	<2.0	2.4	17	4.4	15	<10	86	160	160	<0.30	3.2	<5.0	
	2/26/1996	3	32	15	5.6	<2.0	2.4	17	4	4.2	<10	100	150	240	<0.30	3.3	<5.0	
	3/1/1996	<1.0	9.5	1.4	2.4	<2.0	<1.0	2.5	1.1	<1.0	<10	<50	72	52	<0.30	<5.0	7	
	3/16/1996	<1.0	8.1	1.8	2.4	<2.0	<1.0	3.4	1.4	<1.0	<10	<50	53	57	<0.30	<5.0	<5.0	
	4/3/1996	<1.0	7.3	2.4	2.3	<2.0	1	4	4.7	<1.0	<10	<50	72	44	<0.30	<5.0	7	
	5/3/1996	<1.0	8.6	2.7	2.9	<2.0	<1.0	4.2	4.6	<1.0	<10	34	31	27	<0.30	<5.0	<5.0	
	6/21/1996	<1.0	12	4.7	3.4	<2.0	<1.0	5.3	4.9	4.6	<10	<50	21	34	<0.30	<5.0	5	
	7/20/1996	<1.0	17	6.6	<1.0	<2.0	<1.0	6.7	4.1	<1.0	<10	<50	20	<1.0	<0.30	<5.0	6	
	11/7/1996	<1.0	11	3.3	2.2	<2.0	<1.0	5.2	4.5	<1.0	<10	6.4	<20	<0.30	<5.0	<5.0	<5.0	
	2/6/1997	1.6	9.8	2.1	2.4	<2.0	<1.0	4.4	3.7	<1.0	<10	14	19	<20	<0.30	<5.0	<5.0	
	2/6/1997	1.5	9.9	1.8	2.1	<2.0	<1.0	3.8	3.1	<1.0	<10	34	16	<20	<0.30	<5.0	<5.0	
	5/13/1997	<1.0	5.3	2.4	6.4	<2.0	2	<1.0	8.3	<1.0	<10	<50	<5.0	<20	<0.30	<5.0	<5.0	
	8/7/1997	<1.0	13.0	<1.0	1.2	<2.0	<1.0	4.4	3.3	<1.0	<10	<50	<1.0	<20	<0.30	<5.0	NA	
	11/13/1997	<1.0	9.5	1.8	<1.0	<2.0	<1.0	3.3	1.9	<1.0	<10	<50	55.1	<20	<0.30	<5.0	<5.0	
	2/21/1998	<1.0	13.0	1.9	1.2	<2.0	<1.0	4.1	3.4	<1.0	<10	<50	11	<20	<0.30	<5.0	<5.0	
	5/7/1998	<1.0	12.0	2.5	1.4	<2.0	<1.0	4.1	3.7	<1.0	<10	<50	<1.0	<20	<0.30	<5.0	<5.0	
	8/7/1998	<1.0	16.0	1.1	1	<2.0	<1.0	4.4	3.5	<1.0	<10	<50	17	<20	<0.30	<5.0	<5.0	
	11/4/1998	<1.0	13.8	1.2	<1.0	<2.0	<1.0	4.1	3.0	<1.0	<10	38	99	<20	<0.30	3.0	48	
	2/11/1999	<1.0	13.8	2.2	1.3	<2.0	<1.0	3.7	3.4	<1.0	<10	<50	8.8	<20	<0.30	<5.0	9.8	
	5/13/1999	<1.0	10.8	1.4	<1.0	<2.0	<1.0	4.1	3.7	<1.0	<10	<50	78	<20	25	<0.30	<5.0	
	8/5/1999	<1.0	7.8	1.0	<1.0	<2.0	<1.0	3.4	2.4	<1.0	<10	<50	<1.0	<20	<0.30	6.4	<5.0	
	11/3/1999	<1.0	2.0	<1.0	1.1	<2.0	<1.0	<1.0	1	<1.0	<10	<50	6.1	<20	<0.30	<5.0	<5.0	
	2/16/2000	<1.0	<1.0	<1.0	1.4	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<50	4.0	39	<0.30	<5.0	<5.0	
	5/6/2000	<1.0	1.9	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<50	6.4	<20	<0.30	<5.0	<5.0	
	8/2/2000	<1.0	11.0	2.7	1.2	<2.0	<1.0	4.7	3.1	<1.0	<10	<50	<1.0	<20	<0.30	<5.0	<5.0	
	11/8/2001	NA	NA	Sampled	1.0	<2.0	Down	2.8	3.4	<1.0	NA	Sampled	<50	7.3	<20	<0.30	<5.0	12
	7/1/2001	<1.0	6.1	2.8	1.0	<2.0	<1.0	2.8	3.4	<1.0	<10	<50	8.2	<20	<0.30	<5.0	11	
	11/5/2002	<1.0	4.3	1.7	<1.0	<2.0	<1.0	1.2	1.4	<1.0	<10	<50	8.6	<20	<0.30	<5.0	<5.0	
	7/3/2002	NA	NA	Sampled	<1.0	<2.0	System	Down	1.2	<1.0	<10	<50	<1.0	<20	<0.30	<5.0	Down	NA
	1/28/2003	<1.0	<1.0	<1.0	<1.0	<2.0	System	Down	<1.0	<1.0	<10	<50	8.2	<20	<0.30	<5.0	Down	20
	7/10/2003	NA	NA	Sampled	<1.0	<2.0	System	Down	<1.0	<1.0	<10	<50	<1.0	<20	<0.30	<5.0	Down	NA
	11/3/2004	<1.0	1.7	1.3	<1.0	<2.0	<1.0	<1.0	1.8	<1.0	<10	<50	<1.0	<20	<0.30	<5.0	<5.0	11
	6/28/2004	NA	NA	Sampled	<1.0	<2.0	System	Down	<1.0	<1.0	<10	<50	<1.0	<20	<0.30	<5.0	System	Down
	1/27/2005	<1.0	<1.0	3.3	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<50	<1.0	<20	<0.30	<5.0	<5.0	<5.0
	8/25/2005	<1.0	1.2	1.2	1.4	<2.0	<1.0	3.1	<1.0	<1.0	<10	<50	22	<1.0	<0.30	NA	<5.0	<5.0
	1/28/2006	<1.0	2.1	2.3	2.9	<2.0	<1.0	1.6	2.0	<1.0	<50	<1.0	<20	<0.30	<1.5	<5.0	<5.0	<5.0
	8/2/2006	<1.0	<1.0	1.2	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<50	5.1	<1.0	<0.30	<1.5	<5.0	<5.0
	1/28/2007	<1.0	3.9	3.9	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<50	6.7	<1.0	NA	<1.5	<5.0	<5.0
	7/29/2007	<1.0	<1.0	1.8	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<50	5.8	<1.0	<0.30	<1.5	<5.0	<5.0
	2/2/2008	<1.0	<1.0	2.8	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<50	7.7	<1.0	<0.30	<1.5	<5.0	<5.0
	8/23/2008*	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<50	5.4	8.0	24	<0.50	<1.5	<5.0
	2/19/2009	<1.0	<1.0	2.2	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<50	40	5.2	38	<0.50	4.4	<5.0
	8/13/2009	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<50	<1.0	33	<0.50	<1.5	<5.0	<5.0
	1/29/2010	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<10	<50	18	40	<0.50	18	25	<5.0
	1/31/2011	System	System	Sampled	NA	<2.0	Down	Sampled	Sampled	System	System	Sampled	NA	18	40	<0.50	18	25

\* Table does not include Acetone reported 8/23/2008 at 42 ug/L.

Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date	Surveyed Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
<b>Upper Dockery</b>				
MW 15*	2/12/1996	257.10	36.47	220.63
	2/14/1996		36.96	220.14
	2/15/1996		37.43	219.67
	2/23/1996		38.80	218.30
	2/28/1996		37.07	220.03
	5/2/1996		38.08	219.02
	6/5/1996		37.04	220.06
	7/1/1996		38.76	218.34
	7/31/1996		40.25	216.85
	11/8/1996		38.56	218.54
	2/5/1997		37.45	219.65
	5/12/1997		37.07	220.03
	8/5/1997		38.66	218.44
	11/12/1997		42.23	214.87
	2/4/1998		33.45	223.65
	5/5/1998		33.55	223.55
	8/5/1998		40.74	216.36
	11/3/1998		44.12	212.98
	2/10/1999		43.16	213.94
	5/12/1999		44.94	212.16
	8/5/1999		45.57	211.53
	11/2/1999		46.12	210.98
	2/16/2000		40.91	216.19
	5/8/2000		40.78	216.32
	8/3/2000		42.85	214.25
	1/18/2001		43.28	213.82
	7/11/2001		43.11	213.99
	1/16/2002		46.56	210.54
	7/31/2002		44.86	212.24
	1/28/2003		38.18	218.92
	7/10/2003		33.72	223.38
	1/13/2004		42.20	214.90
	6/28/2004		43.89	213.21
	1/27/2005		46.91	210.19
	7/30/2005		45.25	211.85
	8/2/2006		44.38	212.72
	7/29/2007		41.49	215.61
	8/23/2008		43.64	213.46
	8/13/2009		43.99	213.11
	10/19/2010		45.06	212.04

Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date Surveyed	Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
	5/10/2011		43.51	213.59
	8/31/2012		40.76	216.34
	9/18/2013		39.26	217.84
	8/14/2014		41.55	215.55
MW 15A	2/12/1996	257.29	34.77	222.52
	5/2/1996		36.02	221.27
	6/5/1996		35.96	221.33
	7/1/1996		36.89	220.40
	7/31/1996		38.20	219.09
	11/8/1996		36.16	221.13
	2/5/1997		35.53	221.76
	5/12/1997		35.33	221.96
	8/5/1997		36.88	220.41
	11/12/1997		40.04	217.25
	2/4/1998		31.91	225.38
	5/5/1998		31.97	225.32
	8/5/1998		38.55	218.74
	11/3/1998		41.61	215.68
	2/10/1999		40.53	216.76
	5/12/1999		42.32	214.97
	8/5/1999		43.03	214.26
	11/2/1999		43.15	214.14
	2/16/2000		38.30	218.99
	5/8/2000		38.63	218.66
	8/3/2000		40.85	216.44
	1/18/2001		41.05	216.24
	7/11/2001		41.00	216.29
	1/16/2002		44.70	212.59
	7/30/2002		43.22	214.07
	1/28/2003		36.19	221.10
	7/10/2003		33.66	223.63
	1/13/2004		42.24	215.05
	6/28/2004		43.80	213.49
	1/27/2005		44.37	212.92
	7/30/2005		44.01	213.28
	8/2/2006		43.82	213.47
	7/29/2007		42.96	214.33
	8/23/2008		40.60	216.69
	8/13/2009		44.10	213.19
	10/19/2010		40.03	217.26
	5/10/2011		42.34	214.95



<b>Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina</b>				
<b>Well Number</b>	<b>Date</b>	<b>Surveyed Casing Elevation (ft)</b>	<b>Depth to Groundwater (ft)</b>	<b>Corrected Groundwater Elevation (ft)</b>
	8/31/2012		40.87	216.42
	9/18/2013		44.20	213.09
	8/14/2014		43.84	213.45
MW 18	2/12/1996	242.54	30.99	211.55
	2/14/1996		32.80	209.74
	2/15/1996		33.62	208.92
	5/2/1996		34.40	208.14
	6/5/1996		32.30	210.24
	7/1/1996		34.02	208.52
	7/31/1996		36.50	206.04
	11/8/1996		37.96	204.58
	2/5/1997		35.13	207.41
	5/12/1997		34.03	208.51
	8/5/1997		33.90	208.64
	11/12/1997		37.84	204.70
	2/4/1998		30.26	212.28
	5/5/1998		36.90	205.64
	8/5/1998		42.56	199.98
	11/3/1998		46.49	196.05
	2/10/1999		45.18	197.36
	5/12/1999		46.27	196.27
	8/5/1999		43.52	199.02
	11/2/1999		45.67	196.87
	2/16/2000		37.65	204.89
	5/8/2000		37.72	204.82
	8/3/2000		40.21	202.33
	1/18/2001		37.26	205.28
	7/11/2001		39.40	203.14
	1/16/2002		40.73	201.81
	7/30/2002		38.68	203.86
	1/28/2003		32.55	209.99
	7/10/2003		24.95	217.59
	1/13/2004		37.42	205.12
	6/28/2004		38.91	203.63
	1/27/2005		39.10	203.44
	7/30/2005		38.88	203.66
	8/2/2006		36.02	206.52
	7/29/2007		35.67	206.87
	8/23/2008		36.81	205.73
	8/13/2009		40.13	202.41
	10/19/2010		39.12	203.42

Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date Surveyed	Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
	5/10/2011		37.80	204.74
	8/31/2012		40.23	202.31
	9/18/2013		39.75	202.79
	8/14/2014		38.03	204.51
MW 20	2/12/1996	265.15	24.34	240.81
	2/14/1996		25.34	239.81
	2/15/1996		25.65	239.50
	5/2/1996		22.47	242.68
	6/5/1996		27.25	237.90
	7/1/1996		27.80	237.35
	7/31/1996		28.78	236.37
	11/8/1996		20.12	245.03
	2/5/1997		25.96	239.19
	5/12/1997		24.95	240.20
	8/5/1997		24.15	241.00
	11/12/1997		26.35	238.80
	2/4/1998		16.95	248.20
	5/5/1998		19.32	245.83
	8/5/1998		27.79	237.36
	11/3/1998		26.43	238.72
	2/10/1999		23.68	241.47
	5/12/1999		27.23	237.92
	8/5/1999		28.00	237.15
	11/2/1999		23.68	241.47
	2/16/2000		20.17	244.98
	5/8/2000		24.32	240.83
	8/3/2000		28.40	236.75
	1/18/2001		30.29	234.86
	7/11/2001		28.46	236.69
	1/16/2002		33.49	231.66
	7/30/2002		33.04	232.11
	1/28/2003		23.53	241.62
	7/10/2003		19.86	245.29
	1/13/2004		24.14	241.01
	6/28/2004		27.84	237.31
	1/27/2005		31.70	233.45
	7/30/2005		30.16	234.99
	8/2/2006		28.73	236.42
	7/29/2007		27.52	237.63
	8/23/2008		29.84	235.31
	8/13/2009		32.89	232.26

Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date	Surveyed Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
	10/19/2010		25.72	239.43
	5/10/2011		32.16	232.99
	8/31/2012		28.42	236.73
	9/18/2013		32.99	232.16
	8/14/2014		30.52	234.63
MW 25*	2/12/1996	227.33	26.90	200.43
	2/14/1996		26.79	200.54
	2/15/1996		26.83	200.50
	2/23/1996		27.80	199.53
	2/28/1996		26.09	201.24
	5/2/1996		25.43	201.90
	6/5/1996		25.55	201.78
	7/1/1996		26.26	201.07
	7/31/1996		27.38	199.95
	11/8/1996		26.29	201.04
	2/5/1997		25.27	202.06
	5/13/1997		23.77	203.56
	8/5/1997		26.30	201.03
	11/12/1997		25.52	201.81
	2/4/1998		25.46	201.87
	5/5/1998		21.28	206.05
	8/5/1998		28.37	198.96
	11/3/1998		28.80	198.53
	2/10/1999		28.82	198.51
	5/12/1999		28.24	199.09
	8/5/1999		30.77	196.56
	11/2/1999		32.24	195.09
	2/16/2000		29.93	197.40
	5/8/2000		27.62	199.71
	8/3/2000		31.85	195.48
	1/18/2001		32.02	195.31
	7/11/2001		NM	NM
	1/16/2002		34.24	193.09
	7/31/2002		33.60	193.73
	1/28/2003		28.90	198.43
	7/10/2003		23.10	204.23
	1/13/2004		28.13	199.20
	6/28/2004		29.40	197.93
	1/27/2005		32.72	194.61
	7/30/2005		32.01	195.32
	8/2/2006		30.64	196.69

Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date	Surveyed Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
	7/29/2007		32.92	194.41
	8/23/2008		31.57	195.76
	8/13/2009		33.64	193.69
	10/19/2010		29.02	198.31
	5/10/2011		32.72	194.61
	8/31/2012		31.87	195.46
	9/18/2013		33.74	193.59
	8/14/2014		30.61	196.72
UD-1	6/5/1996	251.50	81.78	175.51
	7/1/1996		43.30	213.99
	7/31/1996		83.70	173.59
	11/8/1996		79.02	178.27
	2/5/1997		81.92	175.37
	5/13/1997		82.36	174.93
	8/5/1997		38.02	219.27
	11/12/1997		41.01	216.28
	2/4/1998		33.76	223.53
	5/5/1998		35.31	221.98
	8/5/1998		78.03	179.26
	11/3/1998		74.20	183.09
	2/10/1999		74.22	183.07
	5/12/1999		52.29	205.00
	8/5/1999		75.77	181.52
	11/2/1999		73.43	183.86
	2/16/2000		41.18	216.11
	5/8/2000		72.93	184.36
	8/3/2000		76.60	180.69
	1/18/2001		78.24	179.05
	7/11/2001		43.02	214.27
	1/16/2002		76.13	181.16
	7/30/2002		44.08	213.21
	1/28/2003		37.99	219.30
	7/10/2003		66.21	191.08
	1/13/2004		65.60	191.69
	6/28/2004		80.12	177.17
	1/27/2005		68.52	188.77
	7/30/2005		75.25	182.04
	8/2/2006		73.80	183.49
	7/29/2007		62.80	194.49
	8/23/2008		77.79	179.50
	8/13/2009		75.53	181.76

Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date	Surveyed Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
	10/19/2010		74.33	182.96
	5/10/2011		43.20	214.09
	8/31/2012		76.62	180.67
	9/18/2013		75.63	181.66
	8/14/2013		51.30	205.99
UD-2	6/5/1996	251.42	38.27	213.15
	7/1/1996		38.91	212.51
	7/31/1996		41.15	210.27
	11/8/1996		41.06	210.36
	2/5/1997		75.03	176.39
	5/13/1997		78.95	172.47
	8/5/1997		39.13	212.29
	11/12/1997		42.18	209.24
	2/4/1998		35.42	216.00
	5/5/1998		37.41	214.01
	8/5/1998		43.50	207.92
	11/3/1998		78.08	173.34
	2/10/1999		77.48	173.94
	5/12/1999		76.76	174.66
	8/5/1999		75.60	175.82
	11/2/1999		75.57	175.85
	2/16/2000		42.33	209.09
	5/8/2000		78.49	172.93
	8/3/2000		68.05	183.37
	1/18/2001		74.64	176.78
	7/11/2001		68.91	182.51
	1/16/2002		NM	NM
	7/30/2002		45.13	206.29
	1/28/2003		38.90	212.52
	7/10/2003		79.83	171.59
	1/13/2004		43.58	207.84
	6/28/2004		45.05	206.37
	1/27/2005		70.56	180.86
	7/30/2005		52.59	198.83
	8/2/2006		63.93	187.49
	7/29/2007		65.00	186.42
	8/23/2008		74.19	183.10
	8/13/2009		NM	NM
	10/19/2010		79.89	177.40
	5/10/2011		44.25	213.04
	8/31/2012		68.07	189.22

Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date	Surveyed Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
	9/18/2013		NM	NM
	8/14/2013		65.61	191.68
UD-3	6/5/1996	249.66	86.42	163.24
	7/1/1996		44.52	205.14
	7/31/1996		86.69	162.97
	11/8/1996		65.81	183.85
	2/5/1997		40.12	209.54
	5/13/1997		38.95	210.71
	8/5/1997		39.16	210.50
	11/12/1997		42.42	207.24
	2/4/1998		35.32	214.34
	5/5/1998		84.67	164.99
	8/5/1998		83.50	166.16
	11/3/1998		78.82	170.84
	2/10/1999		88.09	161.57
	5/12/1999		73.42	176.24
	8/5/1999		72.37	177.29
	11/2/1999		79.06	170.60
	2/16/2000		42.50	207.16
	5/8/2000		68.86	180.80
	8/3/2000		75.15	174.51
	1/18/2001		68.59	181.07
	7/11/2001		85.70	163.96
	1/16/2002		76.01	173.65
	7/30/2002		84.95	164.71
	1/28/2003		38.49	211.17
	7/10/2003		85.24	164.42
	1/13/2004		44.80	204.86
	6/28/2004		68.91	180.75
	1/27/2005		68.10	181.56
	7/30/2005		50.81	198.85
	8/2/2006		63.00	186.66
	7/29/2007		51.64	198.02
	8/23/2008		68.14	181.52
	8/13/2009		75.41	174.25
	10/19/2010		70.26	179.40
	5/10/2011		84.07	165.59
	8/31/2012		75.17	174.49
	9/18/2013		75.51	174.15
	8/14/2014		43.05	206.61

<b>Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina</b>				
<b>Well Number</b>	<b>Date</b>	<b>Surveyed Casing Elevation (ft)</b>	<b>Depth to Groundwater (ft)</b>	<b>Corrected Groundwater Elevation (ft)</b>
UD-4	6/5/1996	239.07	92.60	146.47
	7/1/1996		35.82	203.25
	7/31/1996		92.37	146.70
	11/8/1996		83.45	155.62
	2/5/1997		93.40	145.67
	5/13/1997		94.10	144.97
	8/5/1997		30.77	208.30
	11/12/1997		34.04	205.03
	2/4/1998		26.70	212.37
	5/5/1998		88.35	150.72
	8/5/1998		39.07	200.00
	11/3/1998		62.72	176.35
	2/10/1999		64.14	174.93
	5/12/1999		87.15	151.92
	8/5/1999		78.81	160.26
	11/2/1999		77.21	161.86
	2/16/2000		33.86	205.21
	5/8/2000		85.88	153.19
	8/3/2000		88.62	150.45
	1/18/2001		34.04	205.03
	7/1/2001		36.41	202.66
	1/16/2002		71.33	167.74
	7/30/2002		54.50	184.57
	1/28/2003		29.87	209.20
	7/10/2003		17.20	221.87
	1/13/2004		72.30	166.77
	6/28/2004		70.15	168.92
	1/27/2005		70.60	168.47
	7/30/2005		56.35	182.72
	8/2/2006		76.50	162.57
7/29/2007	69.15	169.92		
8/23/2008	33.59	205.48		
8/13/2009	70.73	168.34		
10/19/2010	87.28	151.79		
5/10/2011	53.62	185.45		
8/31/2012	88.64	150.43		
9/18/2013	70.83	168.24		
8/14/2014	65.93	173.14		
UD-5	6/5/1996	239.02	28.01	211.01
	7/1/1996		32.35	206.67
	7/31/1996		35.00	204.02

Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date	Surveyed Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
	11/8/1996		34.81	204.21
	2/5/1997		32.15	206.87
	5/13/1997		30.59	208.43
	8/5/1997		30.20	208.82
	11/12/1997		33.83	205.19
	2/4/1998		26.12	212.90
	5/5/1998		70.09	168.93
	8/5/1998		77.23	161.79
	11/3/1998		81.40	157.62
	2/10/1999		45.97	193.05
	5/12/1999		61.76	177.26
	8/5/1999		40.68	198.34
	11/2/1999		42.35	196.67
	2/16/2000		33.28	205.74
	5/8/2000		35.83	203.19
	8/3/2000		34.63	204.39
	1/18/2001		33.55	205.47
	7/11/2001		36.42	202.60
	1/16/2002		36.30	202.72
	7/30/2002		35.43	203.59
	1/28/2003		28.76	210.26
	7/10/2003		16.62	222.40
	1/13/2004		68.40	170.62
	6/28/2004		35.11	203.91
	1/27/2005		44.09	194.93
	7/30/2005		56.55	182.47
	8/2/2006		52.10	186.92
	7/29/2007		49.72	189.30
	8/23/2008		33.10	205.92
	8/13/2009		35.70	203.32
	10/19/2010		37.23	201.79
	5/10/2011		34.55	204.47
	8/31/2012		34.65	204.37
	9/18/2013		35.80	203.22
	8/14/2014		51.28	187.74
UD-6	6/5/1996	240.91	29.60	211.31
	7/1/1996		34.20	206.71
	7/31/1996		32.79	208.12
	11/8/1996		58.25	182.66
	2/5/1997		56.03	184.88
	5/13/1997		30.04	210.87



Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date Surveyed	Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
	8/5/1997		31.05	209.86
	11/12/1997		34.55	206.36
	2/4/1998		26.56	214.35
	5/5/1998		57.83	183.08
	8/5/1998		64.94	175.97
	11/3/1998		69.51	171.40
	2/10/1999		68.86	172.05
	5/12/1999		70.25	170.66
	8/5/1999		68.63	172.28
	11/2/1999		72.92	167.99
	2/16/2000		33.52	207.39
	5/8/2000		63.83	177.08
	8/3/2000		34.90	206.01
	1/18/2001		34.21	206.70
	7/11/2001		DRY	DRY
	1/16/2002		37.95	202.96
	7/30/2002		35.95	204.96
	1/28/2003		29.59	211.32
	7/10/2003		19.36	221.55
	1/13/2004		36.34	204.57
	6/28/2004		36.92	203.99
	1/27/2005		49.12	191.79
	7/30/2005		42.50	198.41
	8/2/2006		38.92	201.99
	7/29/2007		52.70	188.21
	8/23/2008		33.76	207.15
	8/13/2009		37.35	203.56
	10/19/2010		65.23	175.68
	5/10/2011		35.07	205.84
	8/31/2012		34.92	205.99
	9/18/2013		37.45	203.46
	8/14/2014		42.53	198.38
UD-7	6/5/1996	255.56	33.67	221.89
	7/1/1996		26.35	229.21
	7/31/1996		24.78	230.78
	11/8/1996		16.21	239.35
	2/5/1997		80.73	174.83
	5/13/1997		60.14	195.42
	8/5/1997		19.81	235.75
	11/12/1997		22.68	232.88
	2/4/1998		11.64	243.92

Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date	Surveyed Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
	5/5/1998		26.06	229.50
	8/5/1998		77.38	178.18
	11/3/1998		DRY	DRY
	2/10/1999		80.83	174.73
	5/12/1999		80.04	175.52
	8/5/1999		24.23	231.33
	11/2/1999		20.10	235.46
	2/16/2000		16.43	239.13
	5/8/2000		19.71	235.85
	8/3/2000		26.46	229.10
	1/18/2001		74.37	181.19
	7/11/2001		25.40	230.16
	1/16/2002		30.73	224.83
	7/30/2002		29.70	225.86
	1/28/2003		19.51	236.05
	7/10/2003		18.55	237.01
	1/13/2004		19.60	235.96
	6/28/2004		19.19	236.37
	1/27/2005		53.95	201.61
	7/30/2005		78.65	176.91
	8/2/2006		77.32	178.24
	7/29/2007		75.83	179.73
	8/23/2008		73.92	181.64
	8/13/2009		30.13	225.43
	10/19/2010		21.11	234.45
	5/10/2011		28.82	226.74
	8/31/2012		26.48	229.08
	9/18/2013		30.23	225.33
	8/14/2014		45.59	209.97
UD-8	6/5/1996	259.43	34.43	225.00
	7/1/1996		40.21	219.22
	7/31/1996		37.50	221.93
	11/8/1996		34.24	225.19
	5/13/1997		33.61	225.82
	8/5/1997		35.27	224.16
	11/12/1997		39.24	220.19
	2/4/1998		29.12	230.31
	5/5/1998		30.46	228.97
	8/5/1998		39.37	220.06
	11/3/1998		62.26	197.17
	2/10/1999		67.61	191.82

Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date	Surveyed Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
	5/12/1999		73.95	185.48
	8/5/1999		42.15	217.28
	11/2/1999		41.58	217.85
	2/16/2000		35.51	223.92
	5/8/2000		37.34	222.09
	8/3/2000		40.00	219.43
	1/18/2001		40.87	218.56
	7/11/2001		40.72	218.71
	1/16/2002		44.89	214.54
	7/30/2002		43.17	216.26
	1/28/2003		34.85	224.58
	7/10/2003		18.75	240.68
	1/13/2004		70.90	188.53
	6/28/2004		66.30	193.13
	1/27/2005		70.50	188.93
	7/30/2005		80.60	178.83
	8/2/2006		85.30	174.13
	7/29/2007		73.88	185.55
	8/23/2008		40.42	219.01
	8/13/2009		44.29	215.14
	10/19/2010		38.74	220.69
	5/10/2011		42.29	217.14
	8/31/2012		40.02	219.41
	9/18/2013		44.39	215.04
	8/14/2014		71.25	188.18
<b>Lower Dockery</b>				
MW 16	2/14/1996	159.97	31.40	128.57
	2/15/1996		31.72	128.25
	2/23/1996		32.87	127.10
	5/2/1996		32.70	127.27
	6/5/1996		31.79	128.18
	7/1/1996		31.89	128.08
	7/31/1996		33.48	126.49
	11/8/1996		33.45	126.52
	2/5/1997		30.13	129.84
	5/13/1997		33.01	126.96
	8/5/1997		33.74	126.23
	11/12/1997		33.23	126.74
	2/4/1998		29.63	130.34
	5/5/1998		32.22	127.75

Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date	Surveyed Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
	8/5/1998		33.88	126.09
	11/3/1998		33.43	126.54
	2/10/1999		32.76	127.21
	5/12/1999		33.35	126.62
	8/5/1999		34.12	125.85
	11/2/1999		34.56	125.41
	2/16/2000		30.21	129.76
	5/8/2000		N/A	N/A
	8/3/2000		N/A	N/A
	1/18/2001		Not Measured - Obstruction	
	7/11/2001		32.62	127.35
	1/16/2002		33.08	126.89
	7/31/2002		34.26	125.71
	1/28/2003		31.06	128.91
	7/10/2003		32.72	127.25
	1/13/2004		32.58	127.39
	6/28/2004		32.45	127.52
	10/21/2004		32.34	127.63
	1/27/2005		32.24	127.73
	5/4/2005		32.45	127.52
	7/30/2005		32.91	127.06
	7/25/2007		32.11	127.86
MW 24*	2/14/1996	132.99	5.75	127.24
	2/15/1996		5.95	127.04
	2/23/1996		6.90	126.09
	2/28/1996		6.15	126.84
	5/2/1996		6.56	126.43
	6/5/1996		6.35	126.64
	7/1/1996		6.75	126.24
	8/1/1996		6.91	126.08
	11/8/1996		7.06	125.93
	2/5/1997		5.44	127.55
	5/13/1997		6.65	126.34
	8/5/1997		7.61	125.38
	11/12/1997		6.86	126.13
	2/4/1998		4.98	128.01
	5/5/1998		6.37	126.62
	8/5/1998		7.76	125.23
	11/3/1998		7.35	125.64
	2/10/1999		6.59	126.40
	5/12/1999		7.50	125.49

Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date Surveyed	Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
	8/5/1999		8.31	124.68
	11/2/1999		8.12	124.87
	2/16/2000		5.01	127.98
	5/8/2000		7.47	125.52
	8/3/2000		9.15	123.84
	1/18/2001		6.03	126.96
	7/11/2001		7.36	125.63
	1/16/2002		7.01	125.98
	7/31/2002		8.28	124.71
	1/28/2003		6.00	126.99
	7/10/2003		7.65	125.34
	1/13/2004		6.67	126.32
	6/28/2004		7.42	125.57
	10/21/2004		6.47	126.52
	1/27/2005		6.42	126.57
	5/4/2005		6.88	126.11
	7/30/2005		7.06	125.93
	7/29/2007		6.10	126.89
LD-1	6/5/1996	161.14	32.71	128.43
	7/1/1996		33.52	127.62
	7/31/1996		46.27	114.87
	11/8/1996		56.64	104.50
	2/5/1997		31.13	130.01
	5/13/1997		56.46	104.68
	8/5/1997		56.45	104.69
	11/12/1997		56.47	104.67
	2/4/1998		30.48	130.66
	5/5/1998		55.3	105.84
	8/5/1998		56.45	104.69
	11/3/1998		56.42	104.72
	2/10/1999		56.40	104.74
	5/12/1999		56.40	104.74
	8/5/1999		56.43	104.71
	11/2/1999		56.43	104.71
	2/16/2000		31.32	129.82
	5/8/2000		56.38	104.76
	8/3/2000		N/A	N/A
	1/18/2001		32.59	128.55
	7/11/2001		34.95	126.19
	1/16/2002		34.00	127.14
	7/30/2002		35.12	126.02

Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date	Surveyed Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
	1/28/2003		32.09	129.05
	7/10/2003		31.99	129.15
	1/13/2004		33.40	127.74
	6/28/2004	Not Measured - System Suspended		
	11/20/2004		33.18	127.96
	1/27/2005		33.12	128.02
	5/4/2005		33.12	128.02
	7/30/2005		33.10	128.04
	7/29/2007		31.96	129.18
LD-2	6/5/1996	154.80	26.93	127.87
	7/1/1996		26.98	127.82
	7/31/1996		35.50	119.30
	11/8/1996		55.39	99.41
	2/5/1997		25.28	129.52
	5/13/1997		54.45	100.35
	8/5/1997		55.49	99.31
	11/12/1997		55.48	99.32
	2/4/1998		25.12	129.68
	5/5/1998		55.02	99.78
	8/5/1998		55.45	99.35
	11/3/1998		55.43	99.37
	2/10/1999		55.40	99.40
	5/12/1999		55.39	99.41
	8/5/1999		55.43	99.37
	11/2/1999		55.40	99.40
	2/16/2000		25.42	129.38
	5/8/2000		57.96	96.84
	8/3/2000		N/A	N/A
	1/18/2001		26.66	128.14
	7/11/2001		28.13	126.67
	1/16/2002		28.26	126.54
	7/30/2002		29.32	125.48
	1/28/2003		26.25	128.55
	7/10/2003		48.60	106.20
	1/13/2004		47.95	106.85
	6/28/2004	Not Measured - System Suspended		
	11/20/2004		27.35	127.45
	1/27/2005		27.31	127.49
	5/4/2005		27.20	127.60
	7/30/2005		27.23	127.57
	7/29/2007		26.39	128.41

Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date	Surveyed Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
LD-3	6/5/1996	150.02	22.64	127.38
	7/1/1996		22.70	127.32
	7/31/1996		27.75	122.27
	11/8/1996		35.18	114.84
	2/5/1997		20.97	129.05
	5/13/1997		34.81	115.21
	8/5/1997		36.92	113.10
	11/12/1997		44.76	105.26
	2/4/1998		20.64	129.38
	5/5/1998		37.44	112.58
	8/5/1998		39.58	110.44
	11/3/1998		38.87	111.15
	2/10/1999		40.25	109.77
	5/12/1999		42.65	107.37
	8/5/1999		43.35	106.67
	11/2/1999		50.98	99.04
	2/16/2000		20.93	129.09
	5/8/2000		50.64	99.38
	8/3/2000		51.00	99.02
	1/18/2001		22.37	127.65
	7/11/2001		23.56	126.46
	1/16/2002		23.85	126.17
	7/30/2002		24.55	125.47
	1/28/2003		22.05	127.97
	7/10/2003		41.79	108.23
	1/13/2004		24.86	125.16
6/28/2004	Not Measured - System Suspended			
11/20/2004		23.25	126.77	
1/27/2005		22.98	127.04	
5/4/2005		23.01	127.01	
7/30/2005		22.85	127.17	
7/29/2007		21.52	128.50	
LD-4	6/5/1996	148.16	20.67	127.49
	7/1/1996		20.83	127.33
	7/31/1996		24.50	123.66
	11/8/1996		29.59	118.57
	2/5/1997		18.96	129.20
	5/13/1997		29.08	119.08
	8/5/1997		30.04	118.12
	11/12/1997		32.79	115.37

Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date	Surveyed Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
	2/4/1998		18.50	129.66
	5/5/1998		29.36	118.80
	8/5/1998		31.11	117.05
	11/3/1998		30.63	117.53
	2/10/1999		31.09	117.07
	5/12/1999		31.92	116.24
	8/5/1999		32.77	115.39
	11/2/1999		36.77	111.39
	2/16/2000		19.37	128.79
	5/8/2000		35.31	112.85
	8/3/2000		36.74	111.42
	1/18/2001		20.40	127.76
	7/11/2001		21.93	126.23
	1/16/2002		21.93	126.23
	7/30/2002		22.78	125.38
	1/28/2003		20.07	128.09
	7/10/2003		45.44	102.72
	1/13/2004		28.60	119.56
	6/28/2004	Not Measured - System Suspended		
	11/20/2004		21.22	126.94
	1/27/2005		21.16	127.00
	5/4/2005		21.38	126.78
	7/30/2005		21.52	126.64
	7/29/2007		21.15	127.01
LD-5	6/5/1996	168.03	26.49	141.54
	7/1/1996		34.66	133.37
	7/31/1996		45.48	122.55
	11/8/1996		45.86	122.17
	2/5/1997		25.51	142.52
	5/13/1997		50.26	117.77
	8/5/1997		45.75	122.28
	11/12/1997		45.75	122.28
	2/4/1998		18.73	149.30
	5/5/1998		45.39	122.64
	8/5/1998		45.76	122.27
	11/3/1998		45.78	122.25
	2/10/1999		45.78	122.25
	5/12/1999		45.74	122.29
	8/5/1999		45.75	122.28
	11/2/1999		45.74	122.29
	2/16/2000		25.06	142.97



Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date Surveyed	Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
	5/8/2000		45.42	122.61
	8/3/2000		45.77	122.26
	1/18/2001		29.85	138.18
	7/11/2001		26.65	141.38
	1/16/2002		34.35	133.68
	7/30/2002		29.72	138.31
	1/28/2003		29.48	138.55
	7/10/2003		42.30	125.73
	1/13/2004		35.95	132.08
	6/28/2004	Not Measured - System Suspended		
	11/20/2004		34.10	133.93
	1/27/2005		33.85	134.18
	5/4/2005		33.82	134.21
	7/30/2005		33.98	134.05
	7/29/2007		32.90	135.13
<b>Macon Source Area</b>				
MW 2	2/12/1996	231.39	37.20	194.19
	4/2/1996		38.33	193.06
	5/1/1996		38.78	192.61
	6/5/1996		38.96	192.43
	7/1/1996		40.52	190.87
	8/1/1996		43.21	188.18
	11/8/1996		41.32	190.07
	2/4/1997		38.83	192.56
	5/12/1997		34.71	196.68
	8/5/1997		35.36	196.03
	11/12/1997		41.54	189.85
	2/4/1998		37.43	193.96
	5/5/1998		32.78	198.61
	8/6/1998		35.93	195.46
	11/3/1998		38.19	193.20
	2/10/1999		38.80	192.59
	5/12/1999		39.99	191.40
	8/5/1999		40.49	190.90
	11/2/1999		42.33	189.06
	2/16/2000		37.84	193.55
	5/8/2000		38.14	193.25
	8/3/2000		45.80	185.59
	1/18/2001		41.19	190.20
	7/10/2001		39.74	191.65
	1/16/2002		43.16	188.23

Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date	Surveyed Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
	7/30/2002		43.15	188.24
	1/28/2003		39.50	191.89
	7/10/2003		33.40	197.99
	1/13/2004		37.86	193.53
	6/28/2004		38.95	192.44
	1/27/2005		41.82	189.57
	7/30/2005		41.46	189.93
	8/2/2006		38.48	192.91
	7/29/2007		37.81	193.58
	8/23/2008		40.74	190.65
	8/13/2009		42.56	188.83
	10/19/2010		39.54	191.85
	5/10/2011		42.27	189.12
	8/31/2012		45.82	185.57
	9/18/2013		42.66	188.73
	8/14/2014		41.82	189.57
MW 2A	2/12/1996	230.83	37.45	193.38
	2/14/1996		37.56	193.27
	2/23/1996		39.78	191.05
	2/28/1996		39.00	191.83
	5/1/1996		38.68	192.15
	6/5/1996		39.18	191.65
	7/1/1996		40.37	190.46
	7/30/1996		43.57	187.26
	11/8/1996		40.91	189.92
	2/4/1997		38.70	192.13
	5/12/1997		35.06	195.77
	8/5/1997		35.73	195.10
	11/12/1997		41.25	189.58
	2/4/1998		37.22	193.61
	5/5/1998		32.66	198.17
	8/6/1998		35.76	195.07
	11/3/1998		37.90	192.93
	2/10/1999		38.45	192.38
	5/12/1999		39.71	191.12
	8/5/1999		40.39	190.44
	11/2/1999		42.07	188.76
	2/16/2000		38.05	192.78
	5/8/2000		38.35	192.48
	8/3/2000		42.39	188.44
	1/18/2001		41.44	189.39

Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date Surveyed	Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
	7/10/2001		40.65	190.18
	1/16/2002		43.05	187.78
	7/30/2002		43.76	187.07
	1/28/2003		39.80	191.03
	7/10/2003		34.10	196.73
	1/13/2004		37.97	192.86
	6/28/2004		39.11	191.72
	1/27/2005		42.10	188.73
	7/30/2005		41.90	188.93
	8/2/2006		37.25	193.58
	7/29/2007		37.07	193.76
	8/23/2008		40.99	189.84
	8/13/2009		42.45	188.38
	10/19/2010		39.75	191.08
	5/10/2011		42.88	187.95
	8/31/2012		42.41	188.42
	9/18/2013		42.55	188.28
	8/14/2014		41.50	189.33
MW 3	2/12/1996	220.67	26.60	194.07
	5/1/1996		28.35	192.32
	6/5/1996		28.16	192.51
	7/1/1996		29.86	190.81
	8/1/1996		30.01	190.66
	11/8/1996		28.57	192.10
	2/4/1997		26.03	194.64
	5/12/1997		27.50	193.17
	8/5/1997		26.08	194.59
	11/12/1997		28.51	192.16
	2/4/1998		23.79	196.88
	5/5/1998		21.44	199.23
	8/6/1998		23.39	197.28
	11/3/1998		24.26	196.41
	2/10/1999		42.46	178.21
	5/12/1999		25.26	195.41
	8/5/1999		26.64	194.03
	11/2/1999		28.92	191.75
	2/16/2000		27.05	193.62
	5/8/2000		27.58	193.09
	8/3/2000		29.33	191.34
	1/18/2001		31.82	188.85
	7/11/2001		33.10	187.57

Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date	Surveyed Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
	1/16/2002		35.98	184.69
	7/30/2002		37.30	183.37
	1/28/2003		33.34	187.33
	7/10/2003		25.35	195.32
	1/13/2004		28.80	191.87
	6/28/2004		30.05	190.62
	1/27/2005		31.20	189.47
	7/30/2005		31.15	189.52
	8/2/2006		29.83	190.84
	7/29/2007		29.48	191.19
	8/23/2008		31.37	189.30
	8/13/2009		35.38	185.29
	10/19/2010		28.98	191.69
	5/10/2011		36.42	184.25
	8/31/2012		29.35	191.32
	9/18/2013		35.48	185.19
	8/14/2014		34.80	185.87
MW 5	2/12/1996	234.51	37.62	196.89
	4/2/1996		37.94	196.57
	5/1/1996		38.02	196.49
	6/5/1996		38.00	196.51
	7/1/1996		39.69	194.82
	8/1/1996		39.50	195.01
	11/8/1996		37.17	197.34
	2/4/1997		35.29	199.22
	5/12/1997		33.60	200.91
	8/5/1997		36.05	198.46
	11/12/1997		38.44	196.07
	2/4/1998		32.77	201.74
	5/5/1998		28.49	206.02
	8/6/1998		31.72	202.79
	11/3/1998		33.02	201.49
	2/10/1999		33.61	200.90
	5/12/1999		34.64	199.87
	8/5/1999		36.71	197.80
	11/2/1999		38.98	195.53
	2/16/2000		37.11	197.40
	5/8/2000		38.27	196.24
	8/3/2000		39.92	194.59
	1/18/2001		43.30	191.21
	7/10/2001		44.69	189.82

Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date Surveyed	Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
	1/16/2002		48.69	185.82
	7/30/2002		50.85	183.66
	1/28/2003		42.85	191.66
	7/10/2003		26.17	208.34
	1/13/2004		39.25	195.26
	6/28/2004		41.70	192.81
	1/27/2005		45.15	189.36
	7/31/2005		44.78	189.73
	8/2/2006		41.84	192.67
	7/29/2007		40.29	194.22
	8/23/2008		42.85	191.66
	8/13/2009		48.09	186.42
	10/19/2010		39.67	194.84
	5/10/2011		49.97	184.54
	8/31/2012		39.94	194.57
	9/18/2013		48.19	186.32
	8/14/2014		43.45	191.06
MW 6	2/12/1996	237.13	39.79	197.34
	4/2/1996		41.61	195.52
	5/1/1996		41.90	195.23
	6/5/1996		39.05	198.08
	7/1/1996		41.72	195.41
	7/30/1996		44.27	192.86
	11/8/1996		44.05	193.08
	2/4/1997		39.08	198.05
	5/12/1997		38.53	198.60
	8/5/1997		39.86	197.27
	11/12/1997		43.73	193.40
	2/4/1998		40.43	196.70
	5/5/1998		33.82	203.31
	8/6/1998		37.85	199.28
	11/3/1998		37.88	199.25
	2/10/1999		38.77	198.36
	5/12/1999		42.45	194.68
	8/5/1999		43.18	193.95
	11/2/1999		42.86	194.27
	2/16/2000		40.74	196.39
	5/8/2000		40.13	197.00
	8/3/2000		43.55	193.58
	1/18/2001		46.32	190.81
	7/10/2001		43.03	194.10

Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date	Surveyed Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
	1/16/2002		44.88	192.25
	7/30/2002		47.30	189.83
	1/28/2003		42.81	194.32
	7/10/2003		35.56	201.57
	1/13/2004		41.12	196.01
	6/28/2004		43.16	193.97
	1/27/2005		46.17	190.96
	7/31/2005		45.21	191.92
	8/2/2006		42.59	194.54
	7/29/2007		42.18	194.95
	8/23/2008		45.87	191.26
	8/13/2009		44.28	192.85
	10/19/2010		41.53	195.60
	5/10/2011		46.42	190.71
	8/31/2012		43.57	193.56
	9/18/2013		44.38	192.75
	8/14/2014		43.97	193.16
MW 7	2/12/1996	228.41	35.57	192.84
	4/2/1996		36.23	192.18
	5/1/1996		36.63	191.78
	6/5/1996		37.05	191.36
	7/1/1996		38.32	190.09
	8/1/1996		38.26	190.15
	11/8/1996		38.69	189.72
	2/4/1997		36.60	191.81
	5/12/1997		33.34	195.07
	8/5/1997		33.96	194.45
	11/12/1997		39.10	189.31
	2/4/1998		34.80	193.61
	5/5/1998		30.41	198.00
	8/6/1998		33.66	194.75
	11/4/1998		35.84	192.57
	2/10/1999		36.31	192.10
	5/12/1999		37.67	190.74
	8/5/1999		38.34	190.07
	11/2/1999		40.04	188.37
	2/16/2000		36.30	192.11
	5/8/2000		37.01	191.40
	8/3/2000		46.40	182.01
	1/18/2001		39.82	188.59
	7/10/2001		44.33	184.08

Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date	Surveyed Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
	1/16/2002		40.76	187.65
	7/30/2002		41.55	186.86
	1/28/2003		38.02	190.39
	7/10/2003		32.38	196.03
	1/13/2004		36.25	192.16
	6/28/2004		38.12	190.29
	1/27/2005		39.55	188.86
	7/31/2005		39.28	189.13
	8/2/2006		37.26	191.15
	7/29/2007		36.58	191.83
	8/23/2008		39.37	189.04
	8/13/2009		40.16	188.25
	10/19/2010		38.41	190.00
	5/10/2011		40.67	187.74
	8/31/2012		46.42	181.99
	9/18/2013		40.26	188.15
	8/14/2014		39.16	189.25
MW 8	2/12/1996	234.54	39.98	194.56
	4/2/1996		40.07	194.47
	5/1/1996		41.01	193.53
	6/5/1996		41.51	193.03
	7/1/1996		43.26	191.28
	8/1/1996		43.88	190.66
	2/4/1997		42.76	191.78
	5/12/1997		37.15	197.39
	8/5/1997		38.69	195.85
	11/12/1997		42.24	192.30
	2/4/1998		36.18	198.36
	5/5/1998		32.60	201.94
	8/6/1998		35.02	199.52
	11/3/1998		36.66	197.88
	2/10/1999		36.69	197.85
	5/12/1999		37.91	196.63
	8/5/1999		40.24	194.30
	11/2/1999		42.64	191.90
	2/16/2000		38.90	195.64
	5/8/2000		41.58	192.96
	8/3/2000		44.28	190.26
	1/18/2001		45.25	189.29
	7/10/2001		44.94	189.60
	1/16/2002		45.79	188.75

Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date Surveyed	Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
	7/30/2002		47.15	187.39
	1/28/2003		43.17	191.37
	7/10/2003		38.05	196.49
	1/13/2004		42.41	192.13
	6/28/2004		44.51	190.03
	1/27/2005		45.36	189.18
	7/31/2005		45.08	189.46
	8/2/2006		42.72	191.82
	7/29/2007		41.26	193.28
	8/23/2008		44.80	189.74
	8/13/2009		45.19	189.35
	10/19/2010		42.98	191.56
	5/10/2011		46.27	188.27
	8/31/2012		44.30	190.24
	9/18/2013		45.29	189.25
	8/14/2014		43.61	190.93
MW 8A	2/12/1996	234.44	44.83	189.61
	4/2/1996		45.53	188.91
	5/1/1996		45.81	188.63
	6/5/1996		45.73	188.71
	7/1/1996		49.12	185.32
	8/1/1996		46.92	187.52
	2/4/1997		44.27	190.17
	5/12/1997		44.93	189.51
	8/5/1997		45.82	188.62
	11/12/1997		47.68	186.76
	2/4/1998		33.47	200.97
	5/5/1998		39.18	195.26
	8/5/1998		43.38	191.06
	11/3/1998		44.02	190.42
	2/10/1999		42.21	192.23
	5/12/1999		43.30	191.14
	8/5/1999		44.93	189.51
	11/2/1999		47.10	187.34
	2/16/2000		44.11	190.33
	5/8/2000		48.41	186.03
	8/3/2000		48.10	186.34
	1/18/2001		51.71	182.73
	7/10/2001		52.70	181.74
	1/16/2002		53.33	181.11
	7/30/2002		56.13	178.31



Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date	Surveyed Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
	1/28/2003		48.96	185.48
	7/10/2003		42.65	191.79
	1/13/2004		42.70	191.74
	6/28/2004		44.85	189.59
	1/27/2005		53.24	181.20
	7/31/2005		50.37	184.07
	8/2/2006		48.21	186.23
	7/29/2007		47.80	186.64
	8/23/2008		51.26	183.18
	8/13/2009		52.73	181.71
	10/19/2010		49.81	184.63
	5/10/2011		55.25	179.19
	8/31/2012		48.12	186.32
	9/18/2013		52.83	181.61
	8/14/2014		49.59	184.85
MW 9*	2/12/1996	254.08	46.60	207.48
	2/14/1996		46.70	207.38
	2/15/1996		47.68	206.40
	2/23/1996		44.03	210.05
	2/28/1996		46.04	208.04
	5/1/1996		43.55	210.53
	6/5/1996		42.89	211.19
	7/1/1996		42.84	211.24
	7/30/1996		42.30	211.78
	11/8/1996		40.65	213.43
	2/4/1997		41.68	212.40
	5/12/1997		41.57	212.51
	8/5/1997		43.38	210.70
	11/12/1997		43.24	210.84
	2/4/1998		38.80	215.28
	5/5/1998		35.43	218.65
	8/6/1998		39.84	214.24
	11/3/1998		40.46	213.62
	2/10/1999		40.98	213.10
	5/12/1999		41.36	212.72
	8/5/1999		43.25	210.83
	11/2/1999		43.89	210.19
	2/16/2000		48.36	205.72
	5/8/2000		42.87	211.21
	8/3/2000		44.45	209.63
	1/18/2001		46.97	207.11

Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date	Surveyed Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
	7/10/2001		47.85	206.23
	1/16/2002		DRY	DRY
	7/30/2002		DRY	DRY
	1/28/2003		48.93	205.15
	7/10/2003		40.77	213.31
	1/13/2004		42.66	211.42
	6/28/2004		44.45	209.63
	1/27/2005		46.56	207.52
	7/31/2005		45.80	208.28
	8/2/2006		44.02	210.06
	7/29/2007		43.57	210.51
	8/23/2008		46.52	207.56
	8/13/2009		46.98	207.10
	10/19/2010		44.27	209.81
	5/10/2011		43.65	210.43
	8/31/2012		44.47	209.61
	9/18/2013		43.28	210.80
	8/14/2014		45.50	208.58
MW 10	2/12/1996	265.51	41.03	224.48
	2/15/1996		40.88	224.63
	4/2/1996		36.98	228.53
	5/1/1996		35.76	229.75
	6/5/1996		35.90	229.61
	7/1/1996		35.96	229.55
	7/30/1996		35.98	229.53
	11/8/1996		33.31	232.20
	2/4/1997		34.13	231.38
	5/12/1997		33.64	231.87
	8/5/1997		36.87	228.64
	11/12/1997		38.41	227.10
	2/4/1998		27.34	238.17
	5/5/1998		26.19	239.32
	8/6/1998		33.07	232.44
	11/3/1998		33.78	231.73
	2/10/1999		33.85	231.66
	5/12/1999		34.86	230.65
	8/5/1999		38.09	227.42
	11/2/1999		40.02	225.49
	2/16/2000		37.17	228.34
	5/8/2000		37.95	227.56
	8/3/2000		39.65	225.86

Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date	Surveyed Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
	1/18/2001		44.16	221.35
	7/10/2001		44.57	220.94
	1/16/2002		48.92	216.59
	7/30/2002		50.18	215.33
	1/28/2003		49.02	216.49
	7/10/2003		34.01	231.50
	1/13/2004		38.55	226.96
	6/28/2004		45.45	220.06
	1/27/2005		46.89	218.62
	7/31/2005		46.66	218.85
	8/2/2006		42.72	222.79
	7/29/2007		41.77	223.74
	8/23/2008		43.71	221.80
	8/13/2009		48.32	217.19
	10/19/2010		39.35	226.16
	5/10/2011		49.30	216.21
	8/31/2012		39.67	225.84
	9/18/2013		48.42	217.09
	8/14/2014		43.10	222.41
MW 11*	2/12/1996	271.92	30.72	241.20
	2/23/1996		31.00	240.92
	2/28/1996		30.00	241.92
	5/1/1996		30.31	241.61
	6/5/1996		31.41	240.51
	7/1/1996		32.92	239.00
	7/30/1996		34.42	237.50
	11/8/1996		27.60	244.32
	2/4/1997		27.26	244.66
	5/12/1997		25.72	246.20
	8/5/1997		30.63	241.29
	11/12/1997		34.08	237.84
	2/4/1998		19.95	251.97
	5/5/1998		20.88	251.04
	8/6/1998		29.66	242.26
	11/3/1998		29.72	242.20
	2/10/1999		26.02	245.90
	5/12/1999		30.16	241.76
	8/5/1999		35.27	236.65
	11/2/1999		34.61	237.31
	2/16/2000		27.39	244.53
	5/8/2000		30.73	241.19

Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date	Surveyed Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
	8/3/2000		36.60	235.32
	1/18/2001		38.79	233.13
	7/10/2001		36.66	235.26
	1/16/2002		43.89	228.03
	7/30/2002		42.63	229.29
	1/28/2003		30.34	241.58
	7/10/2003		24.90	247.02
	1/13/2004		32.79	239.13
	6/28/2004		35.01	236.91
	1/27/2005		37.88	234.04
	7/31/2005		36.48	235.44
	8/2/2006		34.90	237.02
	7/29/2007		34.31	237.61
	8/23/2008		38.34	233.58
	8/13/2009		43.29	228.63
	10/19/2010		32.13	239.79
	5/10/2011		41.75	230.17
	8/31/2012		36.62	235.30
	9/18/2013		43.39	228.53
	8/14/2014		41.68	230.24
MW 11A	2/12/1996	270.28	30.22	240.06
	4/2/1996		27.05	243.23
	5/1/1996		28.05	242.23
	6/5/1996		30.62	239.66
	7/1/1996		32.15	238.13
	7/30/1996		33.11	237.17
	11/8/1996		27.15	243.13
	2/4/1997		26.94	243.34
	5/12/1997		25.35	244.93
	8/5/1997		29.60	240.68
	11/12/1997		33.25	237.03
	2/4/1998		19.90	250.38
	5/5/1998		20.35	249.93
	8/6/1998		29.12	241.16
	11/3/1998		28.98	241.30
	2/10/1999		25.82	244.46
	5/12/1999		29.68	240.60
	8/5/1999		34.48	235.80
	11/2/1999		33.72	236.56
	2/16/2000		27.30	242.98
	5/8/2000		30.13	240.15

Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date Surveyed	Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
	8/3/2000		35.15	235.13
	1/18/2001		37.88	232.40
	7/10/2001		36.06	234.22
	1/16/2002		42.85	227.43
	7/30/2002		42.75	227.53
	1/28/2003		30.02	240.26
	7/10/2003		24.20	246.08
	1/13/2004		31.96	238.32
	6/28/2004		34.18	236.10
	1/27/2005		37.00	233.28
	7/31/2005		36.25	234.03
	8/2/2006		35.19	235.09
	7/29/2007		34.06	236.22
	8/23/2008		37.43	232.85
	8/13/2009		42.25	228.03
	10/19/2010		31.53	238.75
	5/10/2011		41.87	228.41
	8/31/2012		35.17	235.11
	9/18/2013		42.35	227.93
	8/14/2014		40.33	229.95
MW 19*	2/12/1996	236.89	38.49	198.40
	2/14/1996		38.82	198.07
	2/23/1996		40.90	195.99
	2/28/1996		40.50	196.39
	5/1/1996		38.44	198.45
	6/5/1996		37.91	198.98
	7/1/1996		39.23	197.66
	7/30/1996		39.65	197.24
	11/8/1996		37.10	199.79
	2/4/1997		35.33	201.56
	5/12/1997		33.37	203.52
	8/5/1997		36.45	200.44
	11/12/1997		38.38	198.51
	2/4/1998		33.02	203.87
	5/5/1998		27.69	209.20
	8/6/1998		31.30	205.59
	11/3/1998		32.47	204.42
	2/10/1999		33.08	203.81
	5/12/1999		34.26	202.63
	8/5/1999		36.45	200.44
	11/2/1999		39.06	197.83

Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date	Surveyed Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
	2/16/2000		37.92	198.97
	5/8/2000		38.13	198.76
	8/3/2000		39.75	197.14
	1/18/2001		43.00	193.89
	7/10/2001		47.18	189.71
	1/16/2002		DRY	DRY
	7/30/2002		DRY	DRY
	1/28/2003		44.55	192.34
	7/10/2003		34.15	202.83
	1/13/2004		38.80	198.09
	6/28/2004		42.03	194.86
	1/27/2005		44.70	192.19
	7/31/2005		43.77	193.12
	8/2/2006		42.37	194.52
	7/29/2007		41.03	195.86
	8/23/2008		42.55	194.34
	8/13/2009		41.61	195.28
	10/19/2010		39.53	197.36
	5/10/2011		41.08	195.81
	8/31/2012		39.77	197.12
	9/18/2013		40.26	196.63
	8/14/2014		39.16	197.73
UMS-1	6/5/1996	238.96	44.15	194.81
	7/1/1996		44.70	194.26
	7/30/1996		58.60	180.36
	11/8/1996		58.88	180.08
	2/4/1997		39.85	199.11
	5/12/1997		40.80	198.16
	8/5/1997		49.19	189.77
	11/12/1997		54.30	184.66
	2/4/1998		40.65	198.31
	5/5/1998		43.38	195.58
	8/6/1998		50.18	188.78
	11/3/1998		38.80	200.16
	2/10/1999		39.54	199.42
	5/12/1999		56.66	182.30
	8/5/1999		58.78	180.18
	11/2/1999		43.79	195.17
	2/16/2000		41.71	197.25
	5/8/2000		40.27	198.69
	8/3/2000		44.60	194.36

Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date Surveyed	Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
	1/18/2001		56.37	182.59
	7/10/2001		44.23	194.73
	1/16/2002		47.90	191.06
	7/30/2002		48.59	190.37
	1/28/2003		42.91	196.05
	7/10/2003		36.73	202.23
	1/13/2004		49.00	189.96
	6/28/2004		49.40	189.56
	1/27/2005		53.95	185.01
	7/31/2005		53.44	185.52
	8/2/2006		54.29	184.67
	7/29/2007		53.56	185.40
	8/23/2008		55.92	183.04
	8/13/2009		47.30	191.66
	10/19/2010		41.67	197.29
	5/10/2011		47.71	191.25
	8/31/2012		44.62	194.34
	9/18/2013		47.40	191.56
	8/4/2014		42.60	196.36
UMS-2	6/5/1996	236.31	64.75	171.56
	7/1/1996		57.60	178.71
	7/30/1996		64.58	171.73
	11/8/1996		65.40	170.91
	2/4/1997		62.15	174.16
	5/12/1997		37.95	198.36
	8/5/1997		38.56	197.75
	11/12/1997		63.59	172.72
	2/4/1998		56.75	179.56
	5/5/1998		49.99	186.32
	8/6/1998		53.66	182.65
	11/3/1998		57.28	179.03
	2/10/1999		62.24	174.07
	5/12/1999		64.71	171.60
	8/5/1999		65.15	171.16
	11/2/1999		65.07	171.24
	2/16/2000		41.08	195.23
	5/8/2000		40.72	195.59
	8/3/2000		64.83	171.48
	1/18/2001		44.22	192.09
	7/10/2001		43.36	192.95
	1/16/2002		46.18	190.13

Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date	Surveyed Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
	7/30/2002		46.76	189.55
	1/28/2003		42.80	193.51
	7/10/2003		37.01	199.30
	1/13/2004		40.58	195.73
	6/28/2004		41.55	194.76
	1/27/2005		40.03	196.28
	7/31/2005		40.12	196.19
	8/2/2006		43.26	193.05
	7/29/2007		41.49	194.82
	8/23/2008		43.77	192.54
	8/13/2009		45.58	190.73
	10/19/2010		42.12	194.19
	5/10/2011		45.88	190.43
	8/31/2012		64.85	171.46
	9/18/2013		45.68	190.63
	8/14/2014		46.82	189.49
UMS-3	6/5/1996	235.75	43.46	192.29
	7/1/1996		72.78	162.97
	7/30/1996		72.87	162.88
	11/8/1996		73.13	162.62
	2/4/1997		42.68	193.07
	5/12/1997		71.80	163.95
	8/5/1997		72.88	162.87
	11/12/1997		62.98	172.77
	2/4/1998		72.50	163.25
	5/5/1998		38.95	196.80
	8/6/1998		49.98	185.77
	11/3/1998		67.65	168.10
	2/10/1999		39.13	196.62
	5/12/1999		39.95	195.80
	8/5/1999		42.06	193.69
	11/2/1999		44.31	191.44
	2/16/2000		41.75	194.00
	5/8/2000		68.22	167.53
	8/3/2000		46.22	189.53
	1/18/2001		71.61	164.14
	7/10/2001		58.56	177.19
	1/16/2002		69.10	166.65
	7/30/2002		71.73	164.02
	1/28/2003		47.02	188.73
	7/10/2003		40.00	195.75



Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date	Surveyed Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
	1/13/2004		60.90	174.85
	6/28/2004		56.50	179.25
	1/27/2005		64.12	171.63
	7/31/2005		54.59	181.16
	8/2/2006		64.88	170.87
	7/29/2007		47.01	188.74
	8/23/2008		71.16	164.59
	8/13/2009		68.50	167.25
	10/19/2010		69.62	166.13
	5/10/2011		70.85	164.90
	8/31/2012		46.24	189.51
	9/18/2013		68.60	167.15
	8/14/2014		52.30	183.45
UMS-4	6/5/1996	236.53	75.66	160.87
	7/1/1996		76.58	159.95
	7/30/1996		76.98	159.55
	11/8/1996		76.44	160.09
	2/4/1997		36.60	199.93
	5/12/1997		33.55	202.98
	8/5/1997		77.68	158.85
	11/12/1997		38.40	198.13
	2/4/1998		77.88	158.65
	5/3/1998		58.44	178.09
	8/6/1998		78.04	158.49
	11/3/1998		78.05	158.48
	2/10/1999		78.04	158.49
	5/12/1999		53.82	182.71
	8/5/1999		36.70	199.83
	11/2/1999		49.62	186.91
	2/16/2000		46.41	190.12
	5/8/2000		39.50	197.03
	8/3/2000		39.30	197.23
	1/18/2001		42.02	194.51
	7/10/2001		43.34	193.19
	1/16/2002		46.19	190.34
	7/30/2002		48.00	188.53
	1/28/2003		45.38	191.15
	7/10/2003		34.70	201.83
	1/13/2004		63.30	173.23
	6/28/2004		65.10	171.43
	1/27/2005		57.90	178.63

Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date	Surveyed Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
	7/31/2005		63.25	178.63
	8/2/2006		76.01	178.63
	7/29/2007		52.83	178.63
	8/23/2008		41.57	178.63
	8/13/2009		45.59	178.63
	10/19/2010		40.90	178.63
	5/10/2011		47.12	178.63
	8/31/2012		39.32	178.63
	9/18/2013		45.69	178.63
	8/14/2014		45.81	178.63
UMS-5	6/5/1996	257.62	82.55	175.07
	7/1/1996		81.00	176.62
	7/30/1996		82.87	174.75
	11/8/1996		79.92	177.70
	2/4/1997		82.95	174.67
	5/12/1997		41.49	216.13
	8/5/1997		82.62	175.00
	11/12/1997		81.89	175.73
	2/4/1998		81.93	175.69
	5/5/1998		39.22	218.40
	8/6/1998		57.57	200.05
	11/3/1998		76.82	180.80
	2/10/1999		80.76	176.86
	5/12/1999		82.12	175.50
	8/5/1999		83.24	174.38
	11/2/1999		82.85	174.77
	2/16/2000		82.45	175.17
	5/8/2000		81.19	176.43
	8/3/2000		83.55	174.07
	1/18/2001		77.49	180.13
	7/10/2001		66.30	191.32
	1/16/2002		79.00	178.62
	7/30/2002		76.65	180.97
	1/28/2003		50.29	207.33
	7/10/2003		77.51	180.11
	1/13/2004		43.45	214.17
	6/28/2004		45.61	212.01
	1/27/2005		80.20	177.42
	7/31/2005		68.60	189.02
	8/2/2006		80.30	177.32
	7/29/2007		72.92	184.70

<b>Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina</b>				
<b>Well Number</b>	<b>Date</b>	<b>Surveyed Casing Elevation (ft)</b>	<b>Depth to Groundwater (ft)</b>	<b>Corrected Groundwater Elevation (ft)</b>
	8/23/2008		77.04	180.58
	8/13/2009		78.40	179.22
	10/19/2010		82.59	175.03
	5/10/2011		75.77	181.85
	8/31/2012		83.57	174.05
	9/18/2013		78.50	179.12
	8/14/2014		77.90	179.72
<b>Upper Macon</b>				
MW 21*	2/14/1996	155.52	14.52	141.00
	2/23/1996		15.60	139.92
	2/28/1996		14.65	140.87
	5/2/1996		14.38	141.14
	6/5/1996		15.47	140.05
	7/30/1996		7.02	148.50
	11/7/1996		14.62	140.90
	2/4/1997		14.48	141.04
	5/12/1997		14.44	141.08
	8/5/1997		15.25	140.27
	11/12/1997		15.79	139.73
	2/4/1998		13.98	141.54
	5/5/1998		12.27	143.25
	8/6/1998		14.33	141.19
	11/3/1998		14.80	140.72
	2/10/1999		13.74	141.78
	5/12/1999		14.44	141.08
	8/5/1999		16.71	138.81
	11/2/1999		15.85	139.67
	2/16/2000		14.25	141.27
	5/8/2000		15.14	140.38
	8/3/2000		17.85	137.67
	1/18/2001		17.75	137.77
	7/10/2001		17.86	137.66
	1/16/2002		19.95	135.57
	7/31/2002		19.20	136.32
	1/28/2003		15.18	140.34
	7/10/2003		14.57	140.95
	1/13/2004		16.08	139.44
	6/28/2004		17.21	138.31
	1/27/2005		18.99	136.53
	7/31/2005		18.33	137.19

Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date	Surveyed Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
	8/19/2006		17.00	138.52
	7/29/2007		16.21	139.31
	8/23/2008		17.30	138.22
	8/13/2009		19.35	136.17
	10/19/2010		16.54	138.98
	5/10/2011		18.32	137.20
	8/31/2012		17.87	137.65
	9/18/2013		19.45	136.07
	8/14/2014		14.90	140.62
MW 23*	2/14/1996	155.54	4.45	151.09
	2/23/1996		5.73	149.81
	2/28/1996		4.07	151.47
	5/3/1996		5.19	150.35
	6/5/1996		5.59	149.95
	7/1/1996		7.56	147.98
	7/30/1996		7.72	147.82
	11/6/1996		6.19	149.35
	2/4/1997		4.99	150.55
	5/12/1997		5.88	149.66
	8/5/1997		5.32	150.22
	11/12/1997		6.47	149.07
	2/4/1998		3.67	151.87
	5/5/1998		4.11	151.43
	8/6/1998		6.45	149.09
	11/3/1998		6.47	149.07
	2/10/1999		6.55	148.99
	5/12/1999		7.06	148.48
	8/5/1999		8.46	147.08
	11/2/1999		8.98	146.56
	2/16/2000		6.13	149.41
	5/8/2000		6.78	148.76
	8/3/2000		9.03	146.51
	1/18/2001		24.62	130.92
	7/10/2001		8.77	146.77
	1/16/2002		10.47	145.07
	7/30/2002		10.15	145.39
	1/28/2003		4.77	150.77
	7/10/2003		4.65	150.89
	1/13/2004		6.69	148.85
	6/28/2004		7.62	147.92
	1/27/2005		8.60	146.94

Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date	Surveyed Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
	7/31/2005		7.35	148.19
	8/19/2006		6.83	148.71
	7/29/2007		6.06	149.48
	8/23/2008		24.17	131.37
	8/13/2009		9.87	145.67
	10/19/2010		8.18	147.36
	5/10/2011		9.27	146.27
	8/31/2012		9.05	146.49
	9/18/2013		9.97	145.57
UM-1	6/5/1996	183.68	37.01	146.67
	7/1/1996		36.47	147.21
	7/30/1996		41.10	142.58
	11/8/1996		39.44	144.24
	2/4/1997		39.36	144.32
	5/12/1997		40.46	143.22
	8/5/1997		42.03	141.65
	11/12/1997		30.86	152.82
	2/4/1998		45.99	137.69
	5/5/1998		44.93	138.75
	8/6/1998		46.32	137.36
	11/3/1998		36.00	147.68
	2/10/1999		46.23	137.45
	5/12/1999		46.16	137.52
	8/5/1999		47.19	136.49
	11/2/1999		48.01	135.67
	2/16/2000		37.34	146.34
	5/8/2000		40.45	143.23
	8/3/2000		Dry	Dry
	1/18/2001		31.40	152.28
	7/10/2001		45.00	138.68
	1/16/2002		35.87	147.81
	7/30/2002		34.75	148.93
	1/28/2003		47.88	135.80
	7/10/2003		30.00	153.68
	1/13/2004		39.95	143.73
	6/28/2004		31.47	152.21
	1/27/2005		52.60	131.08
	7/31/2005		55.08	128.60
	8/2/2006		45.30	138.38
	7/29/2007		40.47	143.21
	8/23/2008		30.95	152.73

Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date Surveyed	Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
	8/13/2009		35.27	148.41
	10/19/2010		41.85	141.83
	5/10/2011		33.87	149.81
	8/31/2012		35.94	147.74
	9/18/2013		35.37	148.31
	8/14/2014		38.66	145.02
UM-2	6/5/1996	194.13	43.02	151.11
	7/1/1996		47.95	146.18
	7/30/1996		47.33	146.80
	11/8/1996		45.41	148.72
	2/4/1997		45.51	148.62
	5/12/1997		46.24	147.89
	8/5/1997		45.72	148.41
	11/12/1997		40.01	154.12
	2/4/1998		49.57	144.56
	5/5/1998		48.14	145.99
	8/6/1998		50.59	143.54
	11/3/1998		39.20	154.93
	2/10/1999		48.11	146.02
	5/12/1999		51.91	142.22
	8/5/1999		52.68	141.45
	11/2/1999		55.91	138.22
	2/16/2000		44.84	149.29
	5/8/2000		46.30	147.83
	8/3/2000		30.10	164.03
	1/18/2001		40.50	153.63
	7/10/2001		51.53	142.60
	1/16/2002		46.02	148.11
	7/30/2002		44.46	149.67
	1/28/2003		60.01	134.12
	7/10/2003		37.03	157.10
	1/13/2004		46.35	147.78
	6/28/2004		40.05	154.08
	1/27/2005		51.20	142.93
	7/31/2005		53.18	140.95
	8/2/2006		49.22	144.91
	7/29/2007		50.19	143.94
	8/23/2008		40.05	154.08
	8/13/2009		45.42	148.71
	10/19/2010		47.70	146.43
	5/10/2011		43.58	150.55

<b>Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina</b>				
<b>Well Number</b>	<b>Date</b>	<b>Surveyed Casing Elevation (ft)</b>	<b>Depth to Groundwater (ft)</b>	<b>Corrected Groundwater Elevation (ft)</b>
	8/31/2012		30.12	164.01
	9/18/2013		45.52	148.61
	8/14/2014		43.75	150.38
UM-3	6/5/1996	180.35	32.17	148.18
	7/1/1996		32.18	148.17
	7/30/1996		32.36	147.99
	11/8/1996		32.31	148.04
	2/4/1997		32.27	148.08
	5/12/1997		32.25	148.10
	8/5/1997		32.27	148.08
	11/12/1997		19.81	160.54
	2/4/1998		72.50	107.85
	5/5/1998		32.24	148.11
	8/6/1998		32.25	148.10
	11/3/1998		19.69	160.66
	2/10/1999		32.21	148.14
	5/12/1999		32.21	148.14
	8/5/1999		32.24	148.11
	11/2/1999		32.24	148.11
	2/16/2000		32.22	148.13
	5/8/2000		32.05	148.30
	8/3/2000		32.09	148.26
	1/18/2001		18.39	161.96
	7/10/2001		32.33	148.02
	1/16/2002		22.75	157.60
	7/30/2002		21.16	159.19
	1/28/2003		33.77	146.58
	7/10/2003		32.48	147.87
	1/13/2004		19.40	160.95
	6/28/2004		20.06	160.29
	1/27/2005		24.50	155.85
	7/31/2005		25.24	155.11
	8/2/2006		32.08	148.27
	7/29/2007		30.86	149.49
	8/23/2008		17.94	162.41
	8/13/2009		22.15	158.20
	10/19/2010		33.45	146.90
	5/10/2011		20.28	160.07
	8/31/2012		32.11	148.24
	9/18/2013		22.25	158.10
	8/14/2014		25.15	155.20

Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date	Surveyed Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
UM-4	6/5/1996	171.91	21.85	150.06
	7/1/1996		21.10	150.81
	7/30/1996		27.55	144.36
	11/8/1996		24.52	147.39
	2/4/1997		25.62	146.29
	5/12/1997		31.98	139.93
	8/5/1997		30.54	141.37
	11/12/1997		9.41	162.50
	2/4/1998		38.19	133.72
	5/5/1998		45.78	126.13
	8/6/1998		41.81	130.10
	11/3/1998		9.30	162.61
	2/10/1999		47.70	124.21
	5/12/1999		49.25	122.66
	8/5/1999		40.13	131.78
	11/2/1999		42.80	129.11
	2/16/2000		13.00	158.91
	5/8/2000		18.23	153.68
	8/3/2000		29.10	142.81
	1/18/2001		8.18	163.73
	7/10/2001		22.53	149.38
	1/16/2002		12.40	159.51
	7/30/2002		11.08	160.83
	1/28/2003		6.99	164.92
	7/10/2003		7.45	164.46
	1/13/2004		12.83	159.08
	6/28/2004		10.12	161.79
	1/27/2005		25.10	146.81
	7/31/2005		19.56	152.35
	8/2/2006		15.03	156.88
7/29/2007		20.74	151.17	
8/23/2008		7.73	164.18	
8/13/2009		11.80	160.11	
10/19/2010		19.63	152.28	
5/10/2011		10.20	161.71	
8/31/2012		29.12	142.79	
9/18/2013		11.90	160.01	
8/14/2014		12.56	159.35	
UM-5	6/5/1996	168.32	11.77	156.55
	7/1/1996		12.13	156.19



Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date	Surveyed Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
	7/30/1996		16.92	151.40
	11/8/1996		13.85	154.47
	2/4/1997		14.92	153.40
	5/12/1997		16.15	152.17
	8/5/1997		13.65	154.67
	11/12/1997		6.09	162.23
	2/4/1998		14.03	154.29
	5/5/1998		17.38	150.94
	8/6/1998		17.57	150.75
	11/3/1998		6.09	162.23
	2/10/1999		16.71	151.61
	5/12/1999		19.45	148.87
	8/5/1999		19.21	149.11
	11/2/1999		26.98	141.34
	2/16/2000		7.51	160.81
	5/8/2000		11.03	157.29
	8/3/2000		20.30	148.02
	1/18/2001		4.74	163.58
	7/10/2001		16.72	151.60
	1/16/2002		9.18	159.14
	7/30/2002		7.44	160.88
	1/28/2003		3.45	164.87
	7/10/2003		3.85	164.47
	1/13/2004		8.00	160.32
	6/28/2004		6.49	161.83
	1/27/2005		13.75	154.57
	7/31/2005		14.50	153.82
	8/2/2006		5.92	162.40
	7/29/2007		12.76	155.56
	8/23/2008		4.29	164.03
	8/13/2009		8.58	159.74
	10/19/2010		12.43	155.89
	5/10/2011		6.56	161.76
	8/31/2012		20.32	148.00
	9/18/2013		8.68	159.64
	8/14/2014		15.20	153.12
UM-6	6/5/1996	173.05	11.72	161.33
	7/1/1996		13.23	159.82
	7/30/1996		17.58	155.47
	11/8/1996		14.40	158.65
	2/4/1997		14.79	158.26

Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date	Surveyed Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
	5/12/1997		15.26	157.79
	8/5/1997		14.45	158.60
	11/12/1997		9.84	163.21
	2/4/1998		10.51	162.54
	5/5/1998		11.30	161.75
	8/6/1998		16.40	156.65
	11/3/1998		9.64	163.41
	2/10/1999		16.32	156.73
	5/12/1999		18.90	154.15
	8/5/1999		18.90	154.15
	11/2/1999		21.22	151.83
	2/16/2000		10.08	162.97
	5/8/2000		13.17	159.88
	8/3/2000		20.90	152.15
	1/18/2001		8.62	164.43
	7/10/2001		18.75	154.30
	1/16/2002		12.65	160.40
	7/30/2002		11.14	161.91
	1/28/2003		7.59	165.46
	7/10/2003		8.80	164.25
	1/13/2004		10.25	162.80
	6/28/2004		12.71	160.34
	1/27/2005		12.95	160.10
	7/31/2005		13.05	160.00
	8/2/2006		10.98	162.07
	7/29/2007		18.50	154.55
	8/23/2008		8.17	164.88
	8/13/2009		12.05	161.00
	10/19/2010		14.57	158.48
	5/10/2011		10.26	162.79
	8/31/2012		20.92	152.13
	9/18/2013		12.15	160.90
	8/14/2014		12.67	160.38
UM-7	6/5/1996	187.29	54.45	132.84
	7/1/1996		54.58	132.71
	7/30/1996		54.59	132.70
	11/8/1996		55.00	132.29
	2/4/1997		54.73	132.56
	5/12/1997		55.34	131.95
	8/5/1997		54.78	132.51
	11/12/1997		19.96	167.33

Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date	Surveyed Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
	2/4/1998		54.75	132.54
	5/5/1998		54.73	132.56
	8/6/1998		54.98	132.31
	11/3/1998		22.57	164.72
	2/10/1999		54.72	132.57
	5/12/1999		54.53	132.76
	8/5/1999		54.79	132.50
	11/2/1999		54.75	132.54
	2/16/2000		48.91	138.38
	5/8/2000		19.30	167.99
	8/3/2000		54.57	132.72
	1/18/2001		19.32	167.97
	7/10/2001		54.87	132.42
	1/16/2002		21.79	165.50
	7/30/2002		21.02	166.27
	1/28/2003		17.76	169.53
	7/10/2003		17.72	169.57
	1/13/2004		45.25	142.04
	6/28/2004		20.40	166.89
	1/27/2005		48.12	139.17
	7/31/2005		48.60	138.69
	8/2/2006		33.92	153.37
	7/29/2007		48.40	138.89
	8/23/2008		18.87	168.42
	8/13/2009		21.19	166.10
	10/19/2010		20.70	166.59
	5/10/2011		20.14	167.15
	8/31/2012		54.59	132.70
	9/18/2013		21.29	166.00
	8/14/2014		22.86	164.43
<b>Lower Macon</b>				
MW 4	2/14/1996	184.21	40.79	143.42
	4/2/1996		46.08	138.13
	5/2/1996		45.72	138.49
	6/5/1996		43.29	140.92
	7/1/1996		42.09	142.12
	7/30/1996		45.71	138.50
	11/8/1996		46.35	137.86
	2/4/1997		40.86	143.35
	5/12/1997		44.15	140.06

Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date	Surveyed Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
	8/5/1997		44.08	140.13
	11/12/1997		41.79	142.42
	2/4/1998		42.77	141.44
	5/5/1998		40.60	143.61
	8/6/1998		41.77	142.44
	11/3/1998		40.12	144.09
	2/10/1999		43.22	140.99
	5/12/1999		43.16	141.05
	8/5/1999		26.48	157.73
	11/2/1999		42.56	141.65
	2/16/2000		39.70	144.51
	5/8/2000		40.35	143.86
	8/3/2000		41.15	143.06
	1/18/2001		42.24	141.97
	7/10/2001		43.17	141.04
	1/16/2002		45.26	138.95
	7/30/2002		44.73	139.48
	1/28/2003		34.52	149.69
	7/10/2003		39.22	144.99
	1/13/2004		39.35	144.86
	6/28/2004		40.75	143.46
	1/27/2005		40.56	143.65
	7/31/2005		40.23	143.98
	8/2/2006		39.11	145.10
	7/29/2007		38.58	145.63
	8/23/2008		41.79	142.42
	8/13/2009		44.66	139.55
	10/19/2010		41.75	142.46
	5/10/2011		43.85	140.36
MW 12	2/14/1996	171.98	24.87	147.11
	4/2/1996		26.18	145.80
	5/2/1996		26.09	145.89
	6/5/1996		25.97	146.01
	7/1/1996		27.37	144.61
	7/30/1996		27.55	144.43
	11/8/1996		26.24	145.74
	2/4/1997		24.38	147.60
	5/12/1997		25.27	146.71
	8/5/1997		25.66	146.32
	11/12/1997		25.74	146.24
	2/4/1998		22.58	149.40

Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date	Surveyed Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
	5/5/1998		23.02	148.96
	8/6/1998		24.35	147.63
	11/3/1998		24.30	147.68
	2/10/1999		24.12	147.86
	5/12/1999		24.87	147.11
	8/5/1999		26.48	145.50
	11/2/1999		23.31	148.67
	2/16/2000		22.54	149.44
	5/8/2000		23.38	148.60
	8/3/2000		25.05	146.93
	1/18/2001		27.96	144.02
	7/10/2001		26.31	145.67
	1/16/2002		30.82	141.16
	7/30/2002		30.26	141.72
	1/28/2003		25.04	146.94
	7/10/2003		30.95	141.03
	1/13/2004		24.86	147.12
	6/28/2004		26.28	145.70
	1/27/2005		25.10	146.88
	7/31/2005		25.61	146.37
	8/2/2006		25.62	146.36
	7/29/2007		25.46	146.52
	8/23/2008		27.51	144.47
	8/13/2009		30.22	141.76
	10/19/2010		24.78	147.20
	5/10/2011		29.38	142.60
MW 13*	2/14/1996	188.67	49.22	139.45
	2/23/1996		50.20	138.47
	2/28/1996		49.25	139.42
	4/2/1996		50.85	137.82
	5/2/1996		51.38	137.29
	6/5/1996		49.88	138.79
	7/1/1996		50.55	138.12
	7/30/1996		51.59	137.08
	11/8/1996		52.15	136.52
	2/4/1997		49.40	139.27
	5/12/1997		49.42	139.25
	8/5/1997		49.32	139.35
	11/11/1997		50.29	138.38
	2/4/1998		48.25	140.42
	5/5/1998		42.56	146.11

Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date	Surveyed Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
	8/6/1998		45.70	142.97
	11/3/1998		47.33	141.34
	2/10/1999		49.14	139.53
	5/12/1999		49.11	139.56
	8/5/1999		50.19	138.48
	11/2/1999		49.41	139.26
	2/16/2000		48.23	140.44
	5/8/2000		48.05	140.62
	8/3/2000		50.40	138.27
	1/18/2001		50.52	138.15
	7/10/2001		DRY	DRY
	1/16/2002		DRY	
	7/30/2002		53.10	135.57
	1/28/2003		48.61	140.06
	7/10/2003		40.01	148.66
	1/13/2004		46.50	142.17
	6/28/2004		48.46	140.21
	1/27/2005		49.71	138.96
	7/31/2005		49.55	139.12
	8/19/2006		48.20	140.47
	7/29/2007		47.49	141.18
	8/23/2008		50.07	138.60
	8/13/2009		48.46	140.21
	10/19/2010		49.45	139.22
	5/10/2011		52.22	136.45
MW 14	2/14/1996	177.34	34.24	143.10
	4/2/1996		dry	dry
	5/2/1996		dry	dry
	6/5/1996		35.19	142.15
	7/1/1996		dry	dry
	7/30/1996		dry	dry
	11/8/1996		dry	dry
	2/4/1997		34.63	142.71
	5/12/1997		dry	dry
	8/5/1997		dry	dry
	11/11/1997		dry	dry
	2/4/1998		34.09	143.25
	5/5/1998		33.80	143.54
	8/6/1998		35.22	142.12
	11/3/1998		34.76	142.58
	2/10/1999		dry	dry

Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date	Surveyed Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
	5/12/1999		dry	dry
	8/5/1999		dry	dry
	11/2/1999		33.50	143.84
	2/16/2000		32.32	145.02
	5/8/2000		32.18	145.16
	8/3/2000		41.70	135.64
	1/18/2001		dry	dry
	7/10/2001		35.27	142.07
	1/16/2002		DRY	DRY
	7/30/2002		35.65	141.69
	1/28/2003		34.16	143.18
	7/10/2003		30.03	147.32
	1/13/2004		33.96	143.39
	6/28/2004		34.53	142.82
	1/27/2005		34.54	142.80
	7/31/2005		34.15	143.19
	8/2/2006		32.94	144.40
	7/29/2007		32.08	145.26
	8/23/2008		33.52	143.82
	8/13/2009		30.22	147.12
	10/19/2010		33.58	143.76
	5/10/2011		34.77	142.57
MW 14R	2/14/1996	175.95	34.50	141.45
	4/2/1996		38.81	137.14
	5/2/1996		39.27	136.68
	6/5/1996		38.85	137.10
	7/1/1996		37.98	137.97
	7/30/1996		40.03	135.92
	11/8/1996		40.39	135.56
	2/4/1997		35.60	140.35
	5/12/1997		38.74	137.21
	8/5/1997		37.61	138.34
	11/11/1997		37.09	138.86
	2/4/1998		35.81	140.14
	5/5/1998		35.65	140.30
	8/6/1998		37.32	138.63
	11/3/1998		36.18	139.77
	2/10/1999		37.37	138.58
	5/12/1999		37.50	138.45
	8/5/1999		37.67	138.28
	11/2/1999		34.22	141.73

Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date	Surveyed Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
	2/16/2000		32.68	143.27
	5/8/2000		32.18	143.77
	8/3/2000		Dry	Dry
	1/18/2001		36.75	139.20
	7/10/2001		35.80	140.15
	1/16/2002		39.44	136.51
	7/30/2002		38.74	137.21
	1/28/2003		34.48	141.47
	7/10/2003		30.07	145.88
	1/13/2004		34.57	141.38
	6/28/2004		35.02	140.93
	1/27/2005		35.03	140.92
	7/31/2005		34.82	141.13
	8/2/2006		33.79	142.16
	7/29/2007		32.30	143.65
	8/23/2008		36.30	139.65
	8/13/2009		38.84	137.11
	10/19/2010		33.58	142.37
	5/10/2011		37.86	138.09
MW 22*	2/14/1996	128.25	5.73	122.52
	2/23/1996		6.76	121.49
	2/28/1996		5.59	122.66
	5/2/1996		6.87	121.38
	6/5/1996		7.05	121.20
	7/1/1996		6.78	121.47
	7/30/1996		2.31	125.94
	11/8/1996		6.96	121.29
	2/4/1997		6.03	122.22
	5/12/1997		6.80	121.45
	8/5/1997		6.56	121.69
	11/11/1997		6.24	122.01
	2/4/1998		5.64	122.61
	5/5/1998		5.92	122.33
	8/6/1998		6.46	121.79
	11/3/1998		6.10	122.15
	2/10/1999		6.24	122.01
	5/12/1999		6.59	121.66
	8/5/1999		6.94	121.31
	11/2/1999		5.98	122.27
	2/16/2000		5.42	122.83
	5/8/2000		6.12	122.13



Fourth Five-Year Review  
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Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date	Surveyed Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
	8/3/2000		7.25	121.00
	1/18/2001		9.48	118.77
	7/10/2001		NM	NM
	1/16/2002		6.80	121.45
	7/30/2002		7.42	120.83
	1/28/2003		6.97	121.28
	7/10/2003		5.36	122.89
	1/13/2004		6.05	122.20
	6/28/2004		6.61	121.64
	1/27/2005		6.52	121.73
	7/31/2005		6.58	121.67
	8/2/2006		6.00	122.25
	7/29/2007		5.12	123.13
	8/23/2008		9.03	119.22
	8/13/2009		6.20	122.05
	10/19/2010		7.52	120.73
	5/10/2011		6.54	121.71
LM-1	6/5/1996	175.68	69.79	105.89
	7/1/1996		38.61	137.07
	7/30/1996		69.78	105.90
	11/8/1996		70.04	105.64
	2/4/1997		36.12	139.56
	5/12/1997		68.90	106.78
	8/5/1997		69.94	105.74
	11/11/1997		38.31	137.37
	2/4/1998		69.65	106.03
	5/5/1998		69.87	105.81
	8/6/1998		69.86	105.82
	11/3/1998		37.57	138.11
	2/10/1999		61.89	113.79
	5/12/1999		57.69	117.99
	8/5/1999		60.57	115.11
	11/2/1999		35.04	140.64
	2/16/2000		33.00	142.68
	5/8/2000		35.72	139.96
	8/3/2000		36.30	139.38
	1/18/2001		37.41	138.27
	7/10/2001		37.73	137.95
	1/16/2002		40.41	135.27
	7/30/2002		39.40	136.28
	1/28/2003		62.00	113.68

Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date Surveyed	Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
	7/10/2003		30.79	144.89
	1/13/2004		36.70	138.98
	6/28/2004		35.79	139.89
	1/27/2005		36.95	138.73
	7/31/2005		35.99	139.69
	8/2/2006		50.23	125.45
	7/29/2007		40.92	134.76
	8/23/2008		36.96	138.72
	8/13/2009		39.81	135.87
	10/19/2010		37.12	138.56
	5/10/2011		38.52	137.16
LM-2	6/5/1996	157.20	62.06	95.14
	7/1/1996		25.08	132.12
	7/30/1996		58.36	98.84
	11/8/1996		62.16	95.04
	2/4/1997		25.98	131.22
	5/12/1997		63.50	93.70
	8/5/1997		56.96	100.24
	11/11/1997		26.86	130.34
	2/4/1998		53.33	103.87
	5/5/1998		43.23	113.97
	8/6/1998		40.85	116.35
	11/3/1998		26.30	130.90
	2/10/1999		37.86	119.34
	5/12/1999		33.61	123.59
	8/5/1999		30.68	126.52
	11/2/1999		24.80	132.40
	2/16/2000		23.85	133.35
	5/8/2000		24.30	132.90
	8/3/2000		31.00	126.20
	1/18/2001		26.37	130.83
	7/10/2001		28.78	128.42
	1/16/2002		28.72	128.48
	7/30/2002		28.08	129.12
	1/28/2003		24.99	132.21
	7/10/2003		21.22	135.98
	1/13/2004		25.60	131.60
	6/28/2004		25.40	131.80
	1/27/2005		26.84	130.36
	7/31/2005		25.80	131.40
	8/2/2006		26.89	130.31

<b>Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina</b>				
<b>Well Number</b>	<b>Date Surveyed</b>	<b>Casing Elevation (ft)</b>	<b>Depth to Groundwater (ft)</b>	<b>Corrected Groundwater Elevation (ft)</b>
	7/29/2007		27.18	130.02
	8/23/2008		25.92	131.28
	8/13/2009		28.12	129.08
	10/19/2010		25.70	131.50
	5/10/2011		27.20	130.00
LM-3	6/5/1996	157.09	61.16	95.93
	7/1/1996		27.78	129.31
	7/30/1996		49.40	107.69
	11/8/1996		67.24	89.85
	2/4/1997		27.11	129.98
	5/12/1997		57.52	99.57
	8/5/1997		42.42	114.67
	11/11/1997		27.78	129.31
	2/4/1998		43.27	113.82
	5/5/1998		33.48	123.61
	8/6/1998		33.48	123.61
	11/3/1998		26.75	130.34
	2/10/1999		34.02	123.07
	5/12/1999		33.78	123.31
	8/5/1999		34.08	123.01
	11/2/1999		26.24	130.85
	2/16/2000		24.50	132.59
	5/8/2000		25.44	131.65
	8/3/2000		36.07	121.02
	1/18/2001		26.93	130.16
	7/10/2001		36.42	120.67
	1/16/2002		29.00	128.09
	7/30/2002		28.80	128.29
	1/28/2003		25.78	131.31
	7/10/2003		22.49	134.60
	1/13/2004		32.25	124.84
	6/28/2004		33.15	123.94
	1/27/2005		34.09	123.00
	7/31/2005		26.85	130.24
	8/2/2006		33.23	123.86
	7/29/2007		30.73	126.36
	8/23/2008		26.48	130.61
	8/13/2009		28.40	128.69
	10/19/2010		26.84	130.25
	5/10/2011		27.92	129.17

Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date	Surveyed Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
LM-4	6/5/1996	166.84	68.60	98.24
	7/1/1996		37.72	129.12
	7/30/1996		56.91	109.93
	11/8/1996		74.86	91.98
	2/4/1997		36.82	130.02
	5/12/1997		67.80	99.04
	8/5/1997		55.14	111.70
	11/11/1997		37.29	129.55
	2/4/1998		56.01	110.83
	5/5/1998		46.03	120.81
	8/6/1998		45.00	121.84
	11/3/1998		36.29	130.55
	2/10/1999		46.40	120.44
	5/12/1999		46.35	120.49
	8/5/1999		47.23	119.61
	11/2/1999		36.75	130.09
	2/16/2000		35.35	131.49
	5/8/2000		40.15	126.69
	8/3/2000		49.50	117.34
	1/18/2001		37.51	129.33
	7/10/2001		7.20	159.64
	1/16/2002		39.41	127.43
	7/30/2002		39.87	126.97
	1/28/2003		31.25	135.59
	7/10/2003		21.35	145.49
	1/13/2004		35.60	131.24
6/28/2004		35.60	131.24	
1/27/2005		37.66	129.18	
7/31/2005		35.47	131.37	
8/2/2006		50.28	116.56	
7/29/2007		47.90	118.94	
8/23/2008		37.06	129.78	
8/13/2009		38.81	128.03	
10/19/2010		41.55	125.29	
5/10/2011		38.99	127.85	
LM-5	6/5/1996	186.59	66.50	120.09
	7/1/1996		43.91	142.68
	7/30/1996		66.80	119.79
	11/8/1996		66.86	119.73
	2/4/1997		42.85	143.74
	5/12/1997		66.90	119.69

Table 11 Groundwater Elevation Data Macon/Dockery Site Richmond County, North Carolina				
Well Number	Date	Surveyed Casing Elevation (ft)	Depth to Groundwater (ft)	Corrected Groundwater Elevation (ft)
	8/5/1997		66.84	119.75
	11/11/1997		43.84	142.75
	2/4/1998		66.88	119.71
	5/5/1998		67.99	118.60
	8/6/1998		68.04	118.55
	11/3/1998		42.10	144.49
	2/10/1999		68.12	118.47
	5/12/1999		67.73	118.86
	8/5/1999		68.12	118.47
	11/2/1999		42.45	144.14
	2/16/2000		41.35	145.24
	5/8/2000		75.54	111.05
	8/3/2000		54.57	132.02
	1/18/2001		44.20	142.39
	7/10/2001		45.00	141.59
	1/16/2002		47.00	139.59
	7/30/2002		46.35	140.24
	1/28/2003		42.32	144.27
	7/10/2003		37.06	149.53
	1/13/2004		41.45	145.14
	6/28/2004		42.08	144.51
	1/27/2005		42.00	144.59
	7/31/2005		43.85	142.74
	8/2/2006		43.45	143.14
	7/29/2007		44.00	142.59
	8/23/2008		43.75	142.84
	8/13/2009		46.40	140.19
	10/19/2010		76.94	109.65
	5/10/2011		45.47	141.12

















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Date	Location	Macon/Dockery Area																										
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15												
3/31/1996	DUV-1	41.8	130	<10	22	14	18	<10	19	35	<10	<10	<20	140	172	1320	4020	4.1	7900	1600	500	700	2.6	35	NA	<10	800	
5/2/1996	DUV-1	<1.0	130	<10	140	<10	<10	<10	22	140	<10	<10	8.1	180	200	2200	<5.0	5000	720	140	210	<0.20	12	NA	<10	1700		
7/3/1996	DUV-1	<1.0	220	<10	340	<20	18	<10	24	190	<10	<10	<20	410	310	1300	<5.0	3900	300	78	140	<0.50	12	NA	NA	630		
1/6/1996	DUV-1	<5.0	170	<5.0	180	<10	<5.0	7	11	7.5	<5.0	<5.0	13	220	41	220	<5.0	5100	34	<10	37	<0.30	<1.0	NA	NA	300		
2/3/1997	DUV-1	<1.0	76	8.2	13	<10	1.8	2.6	1.3	6.2	1.4	<1.0	9.3	180	28	810	<5.0	6000	80	<20	42	2	<1.0	NA	NA	140		
5/23/1997	DUV-1	<2.0	80	22	19	<0.0	8.9	12	2.3	8	<2.0	<2.0	<0.0	<20	80	1100	<5.0	3800	<0.0	<20	59	<0.50	2.5	NA	NA	400		
8/6/1997	DUV-1	<2.0	76	21	42	<0.0	8.6	7.4	4.9	8.4	<2.0	<2.0	<0.0	29	160	1000	<5.0	3000	360	67	170	1.8	2.5	NA	NA	770		
1/15/1997	DUV-2	<1.0	48	11	87	<2.0	12	11	9.5	18	<1.0	<1.0	<1.0	77.7	1870	<5.0	6600	162	<50	81.4	<1	<1.0	NA	NA	600			
3/2/1998	DUV-2	<1.0	150	12	310	<10	<1.0	4	19	180	<5.0	<5.0	<15	<20	43	600	<5.0	4000	83	<10	39	<0.20	2.3	NA	NA	240		
2/2/1998	DUV-2	<1.0	180	<10	220	<10	<10	<10	56	47	<10	<10	<10	<100	26	810	<5.0	5000	83	<10	34	<0.30	37	NA	NA	61		
5/6/1998	DUV-2	<10	83	54	220	<20	16	<10	65	30	<10	<10	<10	<100	31	700	<5.0	7000	66	<10	56	<0.30	<1.0	NA	NA	39		
8/2/1998	DUV-1	<5.0	90	140	250	<10	27	36	40	30	<5.0	<5.0	<5.0	417	15	900	<5.0	6000	81	<20	30	<0.30	<1.0	NA	NA	39		
8/2/1998	DUV-1	<10	70	110	210	<20	20	28	31	19	<10	<10	<10	<100	19	800	<5.0	5900	54	<10	<10	<0.20	<1.0	NA	NA	34		
11/2/1998	DUV-1	<10	62	160	200	<20	22	27	32	19	<10	<10	<20	<100	72	1300	<5.0	5300	100	<20	70	3.70	<1.0	NA	NA	180		
11/2/1998	DUV-1	<10	56	200	230	<20	22	28	32	<10	<10	<10	<100	69	1200	<5.0	5200	100	<20	66	8.00	<1.0	NA	NA	270			
2/10/1999	DUV-1	<1.0	75	110	130	<10	18	19	22	32	<1.0	<1.0	<1.0	16	790	<5.0	3700	69	<10	30	<0.20	<1.0	<0.20	NA	NA	140		
3/18/1999	DUV-1	<10	71	120	160	<20	18	24	24	26	<10	<10	<10	18	770	<5.0	3400	68	<10	29	<1.0	<1.0	<0.20	NA	NA	140		
5/12/1999	DUV-1	<10	73	270	270	<20	26	24	24	22	<10	<10	<10	<100	59	1200	<5.0	3100	110	<10	24	8.20	<1.0	<0.20	NA	NA	220	
8/12/1999	DUV-1	<10	80	220	200	<20	22	42	37	26	<10	<10	<10	<100	72	900	<5.0	3200	100	<10	29	6.20	<1.0	<0.20	NA	NA	220	
8/2/1999	DUV-1	<10	56	160	<20	17	24	18	29	<10	<10	<10	<100	25	1700	<5.0	6000	200	<10	33	9.70	<1.0	<0.20	NA	NA	270		
8/2/1999	DUV-1	<10	47	170	150	<20	24	41	22	26	<10	<10	<10	<100	41	900	<5.0	6100	110	<10	22	8.20	8	<0.20	NA	NA	220	
7/12/1999	DUV-1	<25	<25	200	220	<20	40	90	44	<25	<25	<25	<25	<250	679	2200	<5.0	720	600	210	210	<0.20	10	8.20	NA	1000		
11/2/1999	DUV-1	<25	<25	260	340	<20	40	100	47	<25	<25	<25	<25	<250	1280	2400	<5.0	970	1220	220	160	8.20	15	8.20	NA	1200		
3/17/2000	DUV-1	<25	<25	210	200	<20	42	80	29	<25	<25	<25	<25	<250	170	1400	<5.0	340	370	29	90	<0.20	6.3	8.00	NA	1100		
5/6/2000	DUV-1	<25	<25	110	220	<10	60	89	39	<25	<25	<25	<25	<250	80	620	<5.0	81	86	<10	42	<0.20	<1.0	8.00	NA	42		
5/6/2000	DUV-1	<25	<25	230	280	<20	66	84	36	<25	<25	<25	<25	<250	84	790	<5.0	84	77	<10	62	<0.20	<1.0	8.20	NA	110		
8/2/2000	DUV-1	<25	<25	600	180	<20	56	72	26	<25	<25	<25	<25	<250	260	1400	<5.0	200	310	16	120	<0.20	6.6	1.1	NA	110		
8/2/2000	DUV-1	<25	<25	410	180	<20	70	74	35	<25	<25	<25	<25	<250	1700	<5.0	290	340	61	120	<0.20	6.2	8.20	NA	170			
1/7/2001	DUV-1	<2.0	71	65	18	46.0	13	6.2	5.6	36	<2.0	<2.0	46.0	<20	35	1700	<5.0	5600	95	<10	52	1.10	<1.0	<0.20	NA	470		
7/1/2001	DUV-1	<2.0	55	24	5.1	46.0	10	3.7	3.6	10	<2.0	<2.0	46.0	<20	44	1200	<5.0	6000	120	<10	70	8.00	3.2	NA	NA	320		
7/1/2001	DUV-1	<5.0	9.9	130	<5.0	<1.0	<5.0	29	<5.0	<5.0	<5.0	<5.0	<5.0	<10	90	220	<5.0	300	440	<10	62	<0.20	170.0	1.1	NA	220		
11/6/2002		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
7/2/2002		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

NA = Not Analyzed      DL = Detection      DUF applies  
 1 200 7 70 5 1 200 2.0 1 1 1000 400 3500 50 1000 1 50 100 50 1000 5 17 1.1 154













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Well ID	Date	Parameter																									
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20						
3/14/1998	4.0	88	25	4.8	<0.0	2.7	918	16	<1.0	1.2	<1.0	<1.0	<1.0	<1.0	27	270	<0.0	870	<0.0	67	120	<0.0	17	1.7	<1.0	910	
3/14/1998	<1.0	76	26	4.8	<0.0	2.7	918	16	<1.0	1.2	<1.0	<1.0	<1.0	<1.0	27	270	<0.0	870	<0.0	67	120	<0.0	17	1.7	<1.0	910	
3/21/1998	<1.0	43	17	<1.0	<2.0	1.1	47	<2.0	1.00	<1.0	<1.0	<1.0	<1.0	<1.0	22	700	<0.0	1000	<0.0	70	160	<0.0	20	1.4	<1.0	2100	
7/20/1998	<2.0	88	24	4	<0.0	<2.0	47	22	<2.0	2.2	<2.0	<2.0	<2.0	<2.0	27	960	2.5	1500	<0.0	110	260	0.31	21	8.2	NA	2000	
1/14/1999	1.5	66	17	2.3	<2.0	<1.0	44	4.4	<1.0	1.4	<1.0	<1.0	<1.0	<1.0	16	720	<0.0	700	<0.0	60	110	<0.0	12	<0.20	NA	700	
3/4/1997	<1.0	71	12	3.3	<2.0	1.2	39	5.4	<1.0	1.2	<1.0	<1.0	<1.0	<1.0	14	370	<0.0	830	<0.0	21	120	<0.0	6	0.42	NA	870	
5/12/1997	<2.0	90	28	3.2	<0.0	<2.0	32	8.8	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	14	330	<0.0	320	<0.0	22	22	<0.20	6.2	0.51	NA	600	
9/6/1997	<2.0	61	6.2	<2.0	<0.0	<2.0	40	<0.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	15	300	<0.0	700	<0.0	60	140	<0.20	6.7	0.31	NA	1200	
11/11/1997	<5	40	<5	<5	<1.0	<5	25	<5	<5	<5	<5	<5	<5	<5	11	250	<0.0	600	<0.0	82	<1.0	2.5	<0.20	NA	60		
3/21/1998	<1.0	87	11	1.4	<2.0	<1.0	40	3.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	11	310	<0.0	380	<0.0	22	<0.20	7.1	0.17	NA	120		
3/6/1998	<2.0	35	14	<2.0	<2.0	<2.0	18	4.4	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	140	<2.0	120	<0.0	46	<0.20	<0.0	<0.20	NA	17		
8/7/1998	<1.0	29	12	<1.0	<2.0	<1.0	40	5.3	<1.0	1	<1.0	<1.0	<1.0	<1.0	<1.0	170	<0.0	120	<0.0	62	<0.20	<1.0	0.22	NA	17		
1/14/1999	<2.0	24	6.2	<1.0	<2.0	<1.0	22	2.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	18	300	<0.0	410	<0.0	20	20	<0.20	7.1	0.20	NA	420	
3/19/1999	<1.0	22	3.7	<1.0	<2.0	<1.0	22	2.7	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	27	800	<0.0	1200	<0.0	200	200	<0.20	27	<0.20	NA	1700	
5/13/1999	<1.0	29	6.6	<1.0	<2.0	<1.0	25	2.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	22	700	<0.0	800	<0.0	60	180	0.20	16	0.70	NA	600	
8/25/1999	<1.0	15	2.4	<1.0	<2.0	<1.0	17	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	26	1000	0.4	1000	<0.0	120	200	<0.20	20	0.22	NA	1600	
1/22/2000	<1.0	11	1.7	<1.0	<2.0	<1.0	12	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	26	800	<0.0	770	0.2	20	200	<0.20	14	0.47	NA	700	
3/16/2000	<1.0	8.5	1.2	<1.0	<2.0	<1.0	9.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	28	310	<0.0	400	<0.0	60	<0.20	<1.0	0.22	NA	260		
7/9/2000	<1.0	6.4	1.0	<1.0	<2.0	<1.0	7.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	28	400	<0.0	500	<0.0	20	120	<0.20	11.9	0.26	NA	400	
8/22/2000	<1.0	4.8	<1.0	<1.0	<2.0	<1.0	5.7	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	17	220	<0.0	800	<0.0	200	100	<0.20	11.9	0.22	NA	600	
1/17/2001	<1.0	1.8	<1.0	<1.0	<2.0	<1.0	2.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	13	220	<0.0	700	<0.0	60	60	<0.20	8.1	0.42	NA	1000	
7/17/2001	NA	Sampled	Due to	Dry	Condition											NA	Sampled	Due to	Dry	Condition							
11/6/2002	NA	Sampled	Due to	Dry	Condition											NA	Sampled	Due to	Dry	Condition							
7/29/2003	NA	Sampled	Due to	Dry	Condition											NA	Sampled	Due to	Dry	Condition							
7/19/2003	NA	Sampled	Due to	Dry	Condition											NA	Sampled	Due to	Dry	Condition							
7/19/2003	<1.0	6.4	1.9	<1.0	<2.0	<1.0	6.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	18	1700	<1.0	100	<0.0	20	20	<0.20	0.24	<1.0	<0.20	NA	60
1/12/2004	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	1.9	<1.0	<1.0	NA	NA	NA	NA	NA	18	1200	<1.0	50	<0.0	42.0	NA	<1.0	<0.20	NA	<0.0	NA	<0.0
6/22/2004	<1.0	1.8	<1.0	<1.0	<2.0	<1.0	1.5	<1.0	<1.0	NA	NA	NA	NA	NA	47	200	2.4	700	<0.0	87	150	NA	20	<0.20	NA	800	
1/27/2005	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	NA	NA	NA	NA	NA	18	210	NA	210	NA	20	NA	<1.0	<1.0	<1.0	NA	110	
7/15/2005	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	15	610	NA	600	NA	82	NA	0.0	<0.20	NA	120		
9/12/2006	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	47	820	2.1	1100	2.5	90	200	NA	27	0.20	NA	1000	
7/24/2007	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	15	20	0.76	200	4.9	19	45	NA	2.4	0.20	NA	200	
8/23/2008	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	18	400	1.9	420	9.2	31	74	NA	0.7	<0.20	NA	200	
8/25/2009	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.4	200	0.77	200	2.0	12	67	NA	0.2	0.2	NA	220	
7/9/2010	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	17	120	<0.20	110	9.6	<1.0	22	<0.20	<1.0	<0.20	NA	27	
10/16/2010	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	12	220	1.60	180	1.80	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	60	
May 28, 2011	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	15	120	1.24	<1.0	120	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	27
7/19/2011	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	10	90	2.50	0.97	270	12	11	20	<0.20	0.0	<0.20	<0.10	20

NA = Not Analyzed Due to Disturbance  
 MFL = Depth



TABLE 13  
 Air Quality Summary  
 Macon/Dockery Site - Richmond County, North Carolina  
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Sample Location	Date	Chloroform mg/m3	1,2-Dichloroethane mg/m3	Trichloroethene mg/m3	Toluene mg/m3
VE-01	2/22/1996	<10	<10	<10	<10
	6/5/1996	<10	<10	<10	<10
	7/1/1996	<10	<10	<10	<10
	11/8/1996	<10	<10	<10	<10
	6/23/1997	<10	<10	<10	<10
	11/13/1997	<2.0	2.3	<2.0	<2.0
	6/19/1998	<2.0	<2.0	<2.0	<2.0
	11/4/1998	<2.0	<2.0	<2.0	<2.0
	5/13/1999	<2.0	<2.0	<2.0	<2.0
	11/3/1999	<2.0	<2.0	<2.0	<2.0
5/8/2000	<1.0	<1.0	<1.0	<1.0	
OW-1	2/22/1996	<10	<10	<10	<10
	6/5/1996	<10	<10	<10	<10
	7/1/1996	<10	<10	<10	<10
	11/8/1996	<10	<10	<10	<10
	6/23/1997	<10	<10	<10	<10
	11/13/1997	<2.0	<2.0	<2.0	<2.0
	6/19/1998	<2.0	<2.0	<2.0	<2.0
	11/4/1998	<2.0	<2.0	<2.0	<2.0
	5/13/1999	<2.0	<2.0	<2.0	<2.0
	11/3/1999	<2.0	<2.0	<2.0	<2.0
5/8/2000	<1.0	<1.0	<1.0	<1.0	
OW-3	2/22/1996	<10	80	<10	<10
	6/5/1996	<10	<10	<10	<10
	7/1/1996	230	<10	<10	<10
	11/8/1996	<10	<10	<10	<10
	6/23/1997	<10	<10	<10	<10
	11/13/1997	<2.0	<2.0	<2.0	<2.0
	6/19/1998	<2.0	<2.0	<2.0	<2.0
	11/4/1998	<2.0	<2.0	<2.0	<2.0
	5/13/1999	<2.0	<2.0	<2.0	<2.0
	11/3/1999	<2.0	<2.0	<2.0	<2.0
5/8/2000	<1.0	<1.0	<1.0	<1.0	
OW-5	2/22/1996	<10	380	<10	<10
	6/5/1996	<10	<10	<10	<10
	11/8/1996	<10	<10	<10	<10
	6/23/1997	<10	<10	<10	<10
	11/13/1997	<2.0	<2.0	<2.0	<2.0
	6/19/1998	<2.0	<2.0	<2.0	<2.0
	11/4/1998	<2.0	<2.0	<2.0	<2.0
	5/13/1999	<2.0	<2.0	<2.0	<2.0
	11/3/1999	<2.0	<2.0	<2.0	<2.0
5/8/2000	<1.0	<1.0	<1.0	<1.0	
SVE Exhaust	2/14/1996	<10	<10	<10	45
	2/15/1996	<10	<10	<10	43
	2/16/1996	<10	<10	<10	73

**TABLE 13**  
**Air Quality Summary**  
**Macon/Dockery Site - Richmond County, North Carolina**  
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Sample Location	Date	Chloroform mg/m3	1,2-Dichloroethene mg/m3	Trichloroethene mg/m3	Toluene mg/m3
	4/3/1996	<10	<10	<10	<10
	6/5/1996	<10	<10	<10	<10
	7/1/1996	<10	<10	<10	<10
	8/1/1996	<10	<10	<10	<10
	2/5/1997	<10	<10	<10	<10
	6/23/1997	<10	<10	<10	<10
	8/7/1997	<2.0	<2.0	<2.0	<2.0
	11/13/1997	<2.0	<2.0	<2.0	<2.0
	2/6/1998	<2.0	<2.0	<2.0	<2.0
	5/7/1998	<2.0	<2.0	<2.0	<2.0
	8/7/1998	<2.0	<2.0	<2.0	<2.0
	11/4/1998	<2.0	<2.0	<2.0	<2.0
	2/11/1999	<2.0	<2.0	<2.0	<2.0
	5/13/1999	<2.0	<2.0	<2.0	<2.0
	8/5/1999	<2.0	<2.0	<2.0	<2.0
	11/3/1999	<2.0	<2.0	<2.0	<2.0
	5/8/2000	<1.0	<1.0	<1.0	1.2
	8/3/2000	<1.0	<1.0	<1.0	<1.0
<b>SVE Inlet Line</b>	6/5/1996	57	<10	<10	<10
	7/1/1996	<10	<10	<10	<10

TABLE 13  
 Air Quality Summary  
 Macon/Dockery Site - Richmond County, North Carolina  
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Sample Location	Date	Chloroform mg/m3	1,2-Dichloroethene mg/m3	Trichloroethene mg/m3	Toluene mg/m3
Upper Dockery Air Stack	2/16/1996	<1.0	<1.0	<1.0	<1.0
	4/3/1996	<1.0	<1.0	<1.0	<1.0
	6/3/1996	<1.0	<1.0	<1.0	<1.0
	7/1/1996	<1.0	<1.0	<1.0	<1.0
	8/1/1996	<1.0	<1.0	<1.0	<1.0
	11/8/1996	<1.0	<1.0	<1.0	<1.0
	2/5/1997	<1.0	<1.0	<1.0	<1.0
	5/12/1997	<1.0	<1.0	<1.0	<1.0
	8/7/1997	<2.0	<2.0	<2.0	<2.0
	11/13/1997	<2.0	<2.0	<2.0	<2.0
	2/6/1998	<2.0	<2.0	<2.0	<2.0
	5/7/1998	<2.0	<2.0	<2.0	<2.0
	8/7/1998	<2.0	<2.0	<2.0	<2.0
	11/4/1998	<2.0	<2.0	<2.0	<2.0
	2/11/1999	<2.0	<2.0	<2.0	<2.0
	5/13/1999	<2.0	<2.0	<2.0	<2.0
	8/5/1999	<2.0	<2.0	<2.0	<2.0
	11/3/1999	<2.0	<2.0	<2.0	<2.0
	5/9/2000	<1.0	<1.0	<1.0	<1.0
	8/3/2000	<1.0	<1.0	<1.0	<1.0
	1/18/2001	<1.0	<1.0	<1.0	<1.0
	7/1/2001	<1.0	<1.0	<1.0	<1.0
	1/16/2002	<1.0	<1.0	<1.0	<1.0
	7/31/2002	<1.0	<1.0	<1.0	<1.0
	1/28/2003	System Down - Not Sampled			
	7/16/2003	System Down - Not Sampled			
	1/13/2004	<1.0	<1.0	<1.0	<1.0
	6/28/2004	<1.0	<1.0	<1.0	<1.0
	1/27/2005	<1.0	<1.0	<1.0	<1.0
	8/25/2005	<1.0	<1.0	<1.0	<1.0
	10/30/2005	<1.0	<1.0	<1.0	<1.0
	1/28/2006	<1.0	<1.0	<1.0	<1.0
	4/30/2006	<1.0	<1.0	<1.0	<1.0
	8/2/2006	<1.0	<1.0	<1.0	<1.0
	10/29/2006	<1.0	<1.0	<1.0	<1.0
	1/27/2007	<1.0	<1.0	<1.0	<1.0
	4/29/2007	<1.0	<1.0	<1.0	<1.0
	7/30/2007	<1.0	<1.0	<1.0	<1.0
	10/28/2007	<1.0	<1.0	<1.0	<1.0
	2/3/2008	<1.0	<1.0	<1.0	<1.0
	6/3/2008	<1.0	<1.0	<1.0	<1.0
	2/19/2009	<1.0	<1.0	<1.0	<1.0
	8/13/2009	<1.0	<1.0	<1.0	<1.0
	1/29/2010	<1.0	<1.0	<1.0	<1.0
	1/31/2011	<1.0	<1.0	<1.0	<1.0
	2/2/2012	<1.0	<1.0	<1.0	<1.0
	9/10/2013	<1.0	<1.0	<1.0	<1.0

**TABLE 13**  
**Air Quality Summary**  
**Macon/Dockery Site - Richmond County, North Carolina**  
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Sample Location	Date	Chloroform mg/m3	1,2-Dichloroethene mg/m3	Trichloroethene mg/m3	Toluene mg/m3
Lower Dockery Air Stack	4/3/1996	<10	<10	<10	<10
	8/1/1996	<10	<10	<10	<10
	11/8/1996	<10	<10	<10	<10
	5/12/1997	<10	<10	<10	<10
	11/13/1997	<2.0	<2.0	<2.0	<2.0
	2/6/1998	<2.0	<2.0	<2.0	<2.0
	5/7/1998	<2.0	<2.0	<2.0	<2.0
	8/7/1998	<2.0	<2.0	<2.0	<2.0
	11/4/1998	<2.0	<2.0	<2.0	<2.0
	2/11/1999	<2.0	<2.0	<2.0	<2.0
	5/13/1999	<2.0	<2.0	<2.0	<2.0
	8/5/1999	<2.0	<2.0	<2.0	<2.0
	11/3/1999	<2.0	<2.0	<2.0	<2.0
	5/9/2000	<1.0	<1.0	<1.0	<1.0
	8/3/2000	<1.0	<1.0	<1.0	<1.0
	1/00/01		System Down - Not Sampled		
	4/24/2001	<1.0	<1.0	<1.0	<1.0
	7/11/2001		System Down - Not Sampled		
	7/31/2002		System Down - Not Sampled		
	1/28/2003		System Down - Not Sampled		
	7/16/2003	<1.0	<1.0	<1.0	<1.0
	1/13/2004	<1.0	<1.0	<1.0	<1.0
	6/28/2004*		Remediation System Suspended - Sample Not Collected		
	1/27/2005*		Remediation System Suspended - Sample Not Collected		
	8/25/2005		Remediation System Suspended - Sample Not Collected		
	10/30/2005		Remediation System Suspended - Sample Not Collected		
	1/30/2006		Remediation System Suspended - Sample Not Collected		
	4/30/2006		Remediation System Suspended - Sample Not Collected		
	8/2/2006		Remediation System Suspended - Sample Not Collected		
	10/29/2006		Remediation System Suspended - Sample Not Collected		
	1/27/2007		Remediation System Suspended - Sample Not Collected		
	4/29/2007		Remediation System Suspended - Sample Not Collected		
	7/30/2007		Remediation System Suspended - Sample Not Collected		
	10/28/2007		Remediation System Suspended - Sample Not Collected		
	2/3/2008		Remediation System Suspended - Sample Not Collected		
	6/3/2008		Remediation System Suspended - No Future Samples Collected		



TABLE 13  
 Air Quality Summary  
 Macon/Dockery Site - Richmond County, North Carolina  
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Sample Location	Date	Chloroform mg/m3	1,2-Dichloroethene mg/m3	Trichloroethene mg/m3	Toluene mg/m3
Macon Source Air Stack	2/16/1996	<10	<10	<10	<10
	4/3/1996	<10	<10	<10	<10
	5/3/1996	<10	<10	<10	<10
	6/5/1996	50	<10	<10	<10
	7/1/1996	<10	<10	<10	<10
	8/1/1996	<10	<10	<10	<10
	11/8/1996	<10	<10	<10	<10
	2/5/1997	<10	<10	<10	<10
	5/12/1997	<10	<10	<10	<10
	8/7/1997	<2.0	<2.0	<2.0	<2.0
	11/13/1997	<2.0	<2.0	<2.0	<2.0
	2/6/1998	<2.0	<2.0	<2.0	<2.0
	5/7/1998	<2.0	<2.0	<2.0	<2.0
	8/7/1998	<2.0	<2.0	<2.0	<2.0
	11/4/1998	<2.0	<2.0	<2.0	<2.0
	2/11/1999	<2.0	<2.0	<2.0	<2.0
	5/13/1999	<2.0	<2.0	<2.0	<2.0
	8/5/1999	<2.0	<2.0	<2.0	<2.0
	11/3/1999	<2.0	<2.0	<2.0	<2.0
	2/17/2000	<2.0	<2.0	<2.0	<2.0
	5/8/2000	<1.0	<1.0	<1.0	<1.0
	8/2/2000	<1.0	<1.0	<1.0	<1.0
	1/18/2001	<1.0	<1.0	<1.0	<1.0
	7/11/2001	<1.0	<1.0	<1.0	<1.0
	1/16/2002	<1.0	<1.0	<1.0	<1.0
	7/31/2002	<1.0	<1.0	<1.0	<1.0
	1/28/2003		System Down - Not Sampled		
	7/16/2003	<1.0	<1.0	<1.0	<1.0
	1/13/2004	<1.0	<1.0	<1.0	<1.0
	6/28/2004	<1.0	1.2	<1.0	<1.0
	1/27/2005	<1.0	<1.0	<1.0	<1.0
	8/25/2005	<1.0	<1.0	<1.0	<1.0
	10/30/2005	<1.0	<1.0	<1.0	<1.0
	1/28/2006	<1.0	<1.0	<1.0	<1.0
	4/30/2006	<1.0	<1.0	<1.0	<1.0
	8/2/2006	<1.0	<1.0	<1.0	<1.0
	10/29/2006	<1.0	<1.0	<1.0	<1.0
	1/27/2007	<1.0	<1.0	<1.0	<1.0
	4/29/2007	<1.0	<1.0	<1.0	<1.0
	7/30/2007	<1.0	<1.0	<1.0	<1.0
	10/28/2007	<1.0	<1.0	<1.0	<1.0
	2/3/2008	<1.0	<1.0	<1.0	<1.0
	6/3/2008	<1.0	<1.0	<1.0	<1.0
	2/19/2009	<1.0	<1.0	<1.0	<1.0
	8/13/2009	<1.0	<1.0	<1.0	<1.0
	1/29/2010	<1.0	<1.0	<1.0	<1.0
	1/31/2011	<1.0	<1.0	<1.0	<1.0
	2/22/2012	<1.0	<1.0	<1.0	<1.0
	9/10/2013	<1.0	<1.0	<1.0	<1.0

**TABLE 13**  
**Air Quality Summary**  
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Sample Location	Date	Chloroform mg/m3	1,2-Dichloroethene mg/m3	Trichloroethene mg/m3	Toluene mg/m3
U/L Macon Air Stack	2/16/1996	<10	<10	<10	<10
	5/3/1996	<10	<10	<10	<10
	6/5/1996	<10	<10	<10	<10
	7/1/1996	850	<10	29	<10
	8/1/1996	<10	<10	<10	<10
	11/8/1996	<10	<10	<10	<10
	2/5/1997	<10	<10	<10	<10
	5/12/1997	<10	<10	<10	<10
	8/7/1997	<2.0	<2.0	<2.0	<2.0
	11/13/1997	<2.0	<2.0	<2.0	<2.0
	2/6/1998	<2.0	<2.0	<2.0	<2.0
	5/7/1998	<2.0	<2.0	<2.0	<2.0
	8/7/1998	<2.0	<2.0	<2.0	<2.0
	11/4/1998	NS	NS	NS	NS
	2/11/1999	<2.0	<2.0	<2.0	<2.0
	5/13/1999	<2.0	<2.0	<2.0	<2.0
	8/5/1999	<2.0	<2.0	<2.0	<2.0
	11/3/1999	<2.0	<2.0	<2.0	<2.0
	2/17/2000	<2.0	<2.0	<2.0	<2.0
	5/8/2000	<1.0	<1.0	<1.0	<1.0
	8/2/2000	<1.0	<1.0	<1.0	<1.0
	1/10/2001	System Down - Not Sampled			
	4/24/2001	<1.0	<1.0	<1.0	<1.0
	7/11/2001	<1.0	<1.0	<1.0	<1.0
	1/16/2002	<1.0	<1.0	<1.0	<1.0
	7/31/2002	NOT	SAMPLED	SYSTEM	DOWN
	1/28/2003	<1.0	<1.0	<1.0	1.3
	7/16/2003	<1.0	<1.0	<1.0	<1.0
	1/13/2004	<1.0	<1.0	<1.0	<1.0
	6/28/2004	System Down - Not Sampled			
	1/27/2005	<1.0	<1.0	<1.0	<1.0
	8/25/2005	<1.0	<1.0	<1.0	<1.0
	10/30/2005	<1.0	<1.0	<1.0	<1.0
	1/28/2006	<1.0	<1.0	<1.0	<1.0
	4/30/2006	<1.0	<1.0	<1.0	<1.0
	8/2/2006	<1.0	<1.0	<1.0	<1.0
	10/29/2006	<1.0	<1.0	<1.0	<1.0
	1/27/2007	<1.0	<1.0	2.8	<1.0
	4/29/2007	<1.0	<1.0	<1.0	<1.0
	7/30/2007	<1.0	<1.0	<1.0	<1.0
	10/28/2007	System Down - Not Sampled			
	2/3/2008	<1.0	<1.0	<1.0	<1.0
	6/3/2008	System Down - Not Sampled			
	2/19/2009	<1.0	<1.0	<1.0	<1.0
	8/13/2009	<1.0	<1.0	<1.0	<1.0
	1/29/2010	<1.0	<1.0	<1.0	<1.0
	1/31/2011	<1.0	<1.0	<1.0	<1.0
	2/22/2012	<1.0	<1.0	<1.0	<1.0
	9/10/2013	<1.0	<1.0	<1.0	<1.0

**TABLE 13**  
**Air Quality Summary**  
**Macon/Dockery Site - Richmond County, North Carolina**  
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Sample Location	Date	Chloroform mg/m3	1,2-Dichloroethene mg/m3	Trichloroethene mg/m3	Toluene mg/m3
Property Line	2/16/1996	<10	<10	<10	<10
	4/3/1996	<10	<10	<10	<10
	5/3/1996	<10	<10	<10	<10
	6/5/1996	<10	<10	<10	<10
	7/1/1996	<10	<10	<10	<10
	8/1/1996	<10	<10	<10	<10
	11/8/1996	<10	<10	<10	<10
	2/5/1997	<10	<10	<10	<10
	5/12/1997	<10	<10	<10	<10
	8/7/1997	<2.0	<2.0	<2.0	<2.0
	11/13/1997	<2.0	<2.0	<2.0	<2.0
	2/6/1998	<2.0	<2.0	<2.0	<2.0
	5/7/1998	<2.0	<2.0	<2.0	<2.0
	8/7/1998	<2.0	<2.0	<2.0	<2.0
	11/4/1998	<2.0	<2.0	<2.0	<2.0
	2/11/1999	<2.0	<2.0	<2.0	<2.0
	5/13/1999	<2.0	<2.0	<2.0	<2.0
	8/5/1999	<2.0	<2.0	<2.0	<2.0
	11/3/1999	<2.0	<2.0	<2.0	<2.0
	2/17/2000	<2.0	<2.0	<2.0	<2.0
	5/8/2000	<1.0	<1.0	<1.0	<1.0
	8/3/2000	<b>**Not analyzed, Tedlar bag deflated during sample shipment**</b>			
	1/18/2001	<1.0	<1.0	<1.0	<1.0
	7/11/2001	<1.0	<1.0	<1.0	<1.0
	1/16/2002	<1.0	<1.0	<1.0	<1.0
	7/31/2002	<1.0	<1.0	<1.0	<1.0
	1/28/2003	<1.0	<1.0	<1.0	<1.0
	7/16/2003	<1.0	<1.0	<1.0	<1.0
	1/13/2004	<1.0	<1.0	<1.0	<1.0
	6/28/2004	<1.0	<1.0	<1.0	<1.0
	1/27/2005	<1.0	<1.0	<1.0	<1.0
	8/25/2005	<1.0	<1.0	<1.0	<1.0
	10/30/2005	<1.0	<1.0	<1.0	<1.0
	1/28/2006	<1.0	<1.0	<1.0	<1.0
	4/30/2006	<1.0	<1.0	<1.0	<1.0
	8/2/2006	<1.0	<1.0	<1.0	<1.0
	10/29/2006	<1.0	<1.0	<1.0	<1.0
	1/27/2007	<1.0	<1.0	1.2	<1.0
	4/29/2007	<1.0	<1.0	<1.0	<1.0
	7/30/2007	<1.0	<1.0	<1.0	<1.0
	10/28/2007	<1.0	<1.0	<1.0	<1.0
	2/3/2008	<1.0	<1.0	<1.0	<1.0
	6/3/2008	<1.0	<1.0	<1.0	<1.0
	2/19/2009	<1.0	<1.0	<1.0	<1.0
	8/13/2009	<1.0	<1.0	<1.0	<1.0
	1/29/2010	<1.0	<1.0	<1.0	<1.0
	1/31/2011	<1.0	<1.0	<1.0	<1.0
	2/23/2012	<1.0	<1.0	<1.0	<1.0
	9/10/2013	<1.0	<1.0	<1.0	<1.0

**TABLE 14  
SUMMARY OF MASS VOC REMOVAL ESTIMATES  
MACON/DOCKERY SITE  
RICHMOND COUNTY, NORTH CAROLINA**

PAGE 1 OF 13

System	Month of Influent analysis	Flow Volume for Period (gallons)	Average Total VOC Concentration (ug/L)	Pounds of VOC Removed For Period (Pounds)	Cumulative VOCs Removed (Pounds)
Upper Dockery	Mar-98	400,155	196	0.65	0.65
	Apr-98	286,151	210	0.50	1.15
	May-98	66,826	177	0.10	1.25
	Jun-98	97,350	120	0.10	1.35
	Jul-98	163,426	108	0.15	1.49
	Aug-98	218,330	284	0.52	2.01
	Sep-98	148,420	284	0.35	2.36
	Oct-98	140,181	284	0.33	2.70
	Nov-98	438,013	294	1.07	3.77
	Dec-98	161,903	294	0.40	4.17
	Jan-97	294,071	294	0.72	4.89
	Feb-97	267,598	131	0.29	5.18
	Mar-97	250,088	131	0.27	5.45
	Apr-97	276,566	131	0.30	5.76
	May-97	289,938	78	0.18	5.94
	Jun-97	135,575	78	0.09	6.03
	Jul-97	99,896	78	0.06	6.09
	Aug-97	70,967	54	0.03	6.12
	Sep-97	56,256	54	0.03	6.15
	Oct-97	277,505	54	0.12	6.27
	Nov-97	143,168	108	0.13	6.40
	Dec-97	78,332	108	0.07	6.47
	Jan-98	103,968	108	0.09	6.56
	Feb-98	296,588	99.3	0.25	6.81
	Mar-98	326,525	99.3	0.27	7.08
	Apr-98	419,475	99.3	0.36	7.43
	May-98	440,448	244	0.90	8.32
	Jun-98	200,182	244	0.41	8.73
	Jul-98	337,048	244	0.69	9.42
	Aug-98	432,719	146.4	0.53	9.94
	Sep-98	411,677	146.4	0.50	10.45
	Oct-98	439,378	146.4	0.54	10.98
Nov-98	362,588	181	0.49	11.47	
12-1-98 to 12-31-98	Dec-98	500,450	161	0.87	12.14
12-31-98 to 1-27-99	Jan-99	552,796	161	0.74	12.88
1-27-99 to 2-23-99	Feb-99	524,380	95	0.42	13.30
2-23-99 to 3-30-99	Mar-99	614,841	95	0.49	13.79
3-30-99 to 4-29-99	Apr-99	571,148	95	0.45	14.24
4-29-99 to 5-27-99	May-99	524,348	139.4	0.61	14.85

**TABLE 14**  
**SUMMARY OF MASS VOC REMOVAL ESTIMATES**  
**MACON/DOCKERY SITE**  
**RICHMOND COUNTY, NORTH CAROLINA**

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System	Month of Influent analysis	Flow Volume for Period (gallons)	Average Total VOC Concentration (µg/L)	Pounds of VOC Removed For Period (Pounds)	Cumulative VOCs Removed (Pounds)
UPPER DOCKERY CONTINUED					
5-27-99 to 6-24-99	Jun-99	431,742	139.4	0.50	15.35
6-24-99 to 7-29-99	Jul-99	392,518	139.4	0.46	15.81
7-29-99 to 8-27-99	Aug-99	190,407	138	0.22	16.03
8-27-99 to 9-27-99	Sep-99	303,910	138	0.35	16.37
9-27-99 to 10-29-99	Oct-99	364,213	138	0.42	16.79
10-29-99 to 11-24-99	Nov-99	277,055	181	0.42	17.21
11-24-99 to 12-30-99	Dec-99	389,943	181	0.59	17.80
12-30-99 to 1-21-00	Jan-00	236,733	181	0.38	18.16
1-21-99 to 2-25-00	Feb-00	0	181	0.00	18.16
2-1-00 to 3-31-00	Mar-00	176,609	181	0.27	18.42
3-31-00 to 4-27-00	Apr-00	164,814	181	0.25	18.67
4-27-00 to 5-29-00	May-00	419,400	72.9	0.25	18.93
5-29-00 to 6-30-00	Jun-00	104,658	72.9	0.06	18.99
6-30-00 to 7-26-00	Jul-00	80,000	72.9	0.05	19.04
7-26-00 to 8-29-00	Aug-00	133,575	72.0	0.08	19.12
8-29-00 to 9-25-00	Sep-00	129,206	72.0	0.08	19.20
9-25-00 to 10-26-00	Oct-00	148,404	72.0	0.09	19.29
10-26-00 to 1-26-01	Jan-01	615,761	88.0	0.46	19.74
1-26-01 to 4-20-01	Apr-01	526,427	88.0	0.39	20.12
4-20-01 to 7-19-01	Jul-01	560,547	101.9	0.48	20.60
7-19-01 to 10-18-01	Oct-01	784,060	101.9	0.57	21.27
11-6-01 to 02-08-02	Jan-02	629,867	91.0	0.40	21.67
5-1-02 to 7-31-02	Jul-02	78,922	150.0	0.10	21.77
8/1/02 to 10/31/02	Oct-02	101,740	150.0	0.13	21.90
11/1/02 to 1/31/03	Jan-03	53,345.2	150.0	0.07	21.96
2/1/03 to 4/30/03	Apr-03	127,879.0	150.0	0.16	22.12
5/1/03 to 7/31/03	Jul-03	60,516.0	179.7	0.09	22.21
8/1/03 to 10/31/03	Oct-03	1,067,205.4	179.7	1.84	23.86
11/1/03 to 1/31/04	Jan-04	681,199.0	133.3	0.78	24.81
2/1/04 to 4/30/04	Jan-04	521,945.0	133.3	0.58	25.19
5/1/04 to 07/31/04	Jan-04	637,264.0	133.3	0.71	25.90
07/31/04 to 10/31/04	Jan-04	617,862.0	133.3	0.69	26.59

**TABLE 14**  
**SUMMARY OF MASS VOC REMOVAL ESTIMATES**  
**MACON/DOCKERY SITE**  
**RICHMOND COUNTY, NORTH CAROLINA**

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UPPER DOCKERY CONTINUED					
11/01/04 to 01/31/05	Jan-06	708,874.0	115.0	0.68	27.27
2/1/05 to 04/30/05	Jan-05	910,315.0	115.0	0.87	28.14
5/1/05 to 7/31/05	Aug-05	508,568.0	99.3	0.42	28.56
8/1/05 to 10/31/05	Aug-05	493,146.0	99.3	0.41	28.97
11/1/05 to 01/31/06	Jan-06	1,033,862	128.9	1.11	30.08
2/1/06 to 4/30/06	Jan-06	1,427,828	128.9	1.53	31.82
5/1/06 to 7/31/06	Aug-06	856,310	159.0	1.14	32.75
8/1/06 to 10/27/06	Aug-06	1,158,863	159.0	1.54	34.29
10/27/06 to 01/27/07	Jan-07	1,600,222	103.0	1.37	35.68
1/27/07 to 4/28/07	Jan-07	1,852,759	103.0	1.59	37.25
4/28/07 to 7/28/07	Jul-07	1,625,766	42.0	0.57	37.82
7/28/07 to 10/28/07	Jul-07	1,158,863	42.0	0.41	38.23
10/28/07 to 02/03/08	Feb-08	1,667,261	63.0	0.68	39.10
2/3/08 to 4/27/08	Feb-08	1,404,308	63.0	0.74	39.84
4/27/08 to 7/28/08	Feb-08	1,572,952	63.0	0.83	40.87
7/28/08 to 10/28/08	Aug-08	850,924	51.0	0.38	41.05
10/28/08 to 1/31/09	Aug-08	1,076,142	51.0	0.46	41.50
1/31/09 to 4/28/09	Feb-09	1,306,800	68.0	0.74	42.25
4/28/09 to 7/30/09	Feb-09	1,504,209	68.0	0.85	43.10
7/30/09 to 10/29/09	Aug-09	1,741,565	65.0	0.94	44.04
10/29/09 to 01/31/10	Aug-09	1,528,220	65.0	0.83	44.87
01/31/10 to 4/28/10	Jan-10	1,033,832	141.0	1.22	46.09
4/28/10 to 7/30/10	Jan-10	1,567,225	141.0	1.84	47.93
7/30/10 to 10/29/10	Oct-10	1,284,968	86.0	0.92	48.85
10/29/10 to 1/31/11	Oct-10	1,478,575	86.0	1.06	49.91
01/31/11 to 4/28/11	Jan-11	837,469	66.0	0.46	50.37
4/28/11 to 7/30/11	Jan-11	1,011,573	66.0	0.56	50.93
7/30/11 to 10/29/11	Sep-11	1,228,392	70.0	0.72	51.64
10/29/11 to 1/31/12	Sep-11	1,413,956	70.0	0.83	52.47
01/31/12 to 4/29/12	Feb-12	1,637,071	58.0	0.79	53.26
4/29/12 to 7/30/12	Feb-12	1,436,527	58.0	0.69	53.95
7/30/12 to 10/29/12	Aug-12	971,802	68.0	0.55	54.51
10/29/12 to 1/31/13	Aug-12	1,473,182	68.0	0.84	55.34
01/31/13 to 4/28/13	Apr-13	1,207,870	54.0	0.54	55.88
4/28/13 to 7/30/13	Apr-13	977,520	54.0	0.44	56.32
7/30/13 to 10/29/13	Sep-13	1,151,898	67.0	0.64	56.97
10/29/13 to 1/31/14	Sep-13	1,072,576	67.0	0.60	57.57
01/31/14 to 4/29/14	Apr-14	1,127,487	74.0	0.70	58.26
4/29/14 to 7/30/14	Apr-14	1,470,580	74.0	0.91	59.17

**TABLE 14**  
**SUMMARY OF MASS VOC REMOVAL ESTIMATES**  
**MACON/DOCKERY SITE**  
**RICHMOND COUNTY, NORTH CAROLINA**  
**PAGE 4 OF 13**

System	Month of influent analysis	Flow Volume for Period (gallons)	Average Total VOC Concentration (ug/L)	Pounds of VOC Removed For Period (Pounds)	Cumulative VOCs Removed (Pounds)
Lower Dockery	Mar-96	328,448	200	0.55	0.55
	Apr-96	191,090	150	0.24	0.79
	May-96	245,715	148	0.30	1.09
	Jun-96	8,819	152	0.01	1.10
	Jul-96	151,827	152	0.19	1.30
	Aug-96	126,232	170	0.18	1.47
	Sep-96	63,833	170	0.09	1.56
	Oct-96	480,379	170	0.65	2.22
	Nov-96	183,210	140.8	0.22	2.43
	Dec-96	137,594	140.8	0.16	2.59
	Jan-97	286,202	140.8	0.34	2.93
	Feb-97	90,912	140.8	0.11	3.04
	Mar-97	277,823	110	0.25	3.29
	Apr-97	180,580	110	0.17	3.46
	May-97	884,855	118	0.66	4.12
	Jun-97	501,887	118	0.49	4.60
	Jul-97	581,027	118	0.56	5.17
	Aug-97	414,199	84	0.29	5.46
	Sep-97	481,049	84	0.34	5.79
	Oct-97	457,804	84	0.32	6.11
	Nov-97	308,483	82	0.16	6.27
	Dec-97	272,079	82	0.14	6.41
	Jan-98	788,548	62	0.41	6.82
	Feb-98	123,013	57.9	0.06	6.88
	Mar-98	287,027	57.9	0.14	7.02
	Apr-98	452,536	57.9	0.22	7.24
	May-98	141,938	56.8	0.07	7.30
	Jun-98	453,014	56.8	0.21	7.52
	Jul-98	504,860	56.8	0.24	7.76
	Aug-98	453,131	62.2	0.23	7.99
	Sep-98	591,481	62.2	0.31	8.30
	Oct-98	471,729	62.2	0.24	8.54
	Nov-98	642,213	52.6	0.28	8.83
12-1-98 to 12-31-98	Dec-98	415,550	52.6	0.18	9.01
12-31-98 to 1-27-99	Jan-99	361,051	52.6	0.18	9.17
1-27-99 to 2-23-99	Feb-99	522,107	35.2	0.15	9.32
2-23-99 to 3-30-99	Mar-99	822,184	35.2	0.18	9.50
3-30-99 to 4-29-99	Apr-99	704,282	35.2	0.21	9.71

**TABLE 14**  
**SUMMARY OF MASS VOC REMOVAL ESTIMATES**  
**MACON/DOCKERY SITE**  
**RICHMOND COUNTY, NORTH CAROLINA**  
**PAGE 5 OF 13**

System	Month of Influent analysis	Flow Volume for Period (gallons)	Average Total VOC Concentration (ug/L)	Pounds of VOC Removed For Period (Pounds)	Cumulative VOCs Removed (Pounds)
<b>LOWER DOCKERY CONTINUED</b>					
4-29-99 to 5-27-99	May-99	581,688	47	0.23	9.94
5-27-99 to 8-24-99	Jun-99	427,905	47	0.17	10.11
8-24-99 to 7-29-99	Jul-99	473,996	47	0.19	10.29
7-29-99 to 8-27-99	Aug-99	226,628	36.9	0.07	10.36
8-27-99 to 9-27-99	Sep-99	469,303	38.9	0.14	10.50
9-27-99 to 10-29-99	Oct-99	591,217	36.9	0.18	10.69
10-29-99 to 11-24-99	Nov-99	464,502	22	0.09	10.77
11-24-99 to 12-30-99	Dec-99	447,951	22	0.08	10.85
12-30-99 to 1-21-00	Jan-00	503,520	22	0.09	10.95
1-21-00 to 02-25-00	Feb-00	95,187	22	0.02	10.98
3-1-00 to 3-31-00	Mar-00	235,556	22	0.04	11.01
3-31-00 to 4-27-00	Apr-00	212,338	22	0.04	11.05
4-27-00 to 5-26-00	May-00	485,789	30.3	0.12	11.17
5-26-00 to 6-30-00	Jun-00	382,997	30.3	0.10	11.27
6-30-00 to 7-28-00	Jul-00	500,849	30.3	0.13	11.39
7-28-00 to 8-29-00	Aug-00	284,722	37.5	0.09	11.48
8-29-00 to 9-25-00	Sep-00	587,633	37.5	0.18	11.66
9-25-00 to 10-26-00	Oct-00	512,427	37.5	0.16	11.82
10-26-00 to 1-26-01	Jan-01	769,926	37.5	0.24	12.07
1-26-01 to 4-20-01	Apr-01	125,989	37.5	0.04	12.10
4-20-01 to 7-19-01	Jul-01	927,723	37.5	0.29	12.39
7-19-01 to 10-18-01	Oct-01	182,133	37.5	0.05	12.45
11-08-01 to 02-08-02	Jan-02	1,705	37.5	0.00	12.45
5-1-02 to 7-31-02	Jul-02	577,048	37.5	0.18	12.63
8/1/02 to 10/31/02	Oct-02	160,412	37.5	0.05	12.68
11/1/02 to 1/31/03	Jan-03	7,031	37.5	0.00	12.68
11/1/02 to 3/14/03	Mar-03	10,624	28.7	0.00	12.68
2/1/03 to 4/30/03	Apr-03	513,285	28.7	0.12	12.80
5/1/03 to 7/31/03	Jul-03	1,042,935.4	9.9	0.09	12.89
8/1/03 to 10/31/03	Oct-03	218,037.103	9.9	0.02	12.91
11/1/03 to 1/31/04	Jan-04	659,533.5	8.5	0.04	12.94
2/1/04 to 3/19/04	Apr-04	553,193.290	8.5	0.03	12.97

Used October 2000 influent analytical data to calculate mass removal estimates for period of 10-26-00 to 1-26-01 due to system operational problems.

\*Lower Dockery groundwater remediation system shut down on 3/19/04



**TABLE 14  
SUMMARY OF MASS VOC REMOVAL ESTIMATES  
MACON/DOCKERY SITE  
RICHMOND COUNTY, NORTH CAROLINA  
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System	Month of Influent analysis	Flow Volume for Period (gallons)	Average Total VOC Concentration (ug/L)	Pounds of VOC Removed For Period (Pounds)	Cumulative VOCs Removed (Pounds)
Macon Source Area	Mar-96	426,083	55	0.20	0.20
	Apr-96	364,772	61	0.19	0.39
	May-96	267,720	41	0.09	0.47
	Jun-96	114,048	60	0.06	0.53
	Jul-96	202,477	43	0.07	0.60
	Aug-96	207,503	61	0.11	0.71
	Sep-96	209,649	61	0.11	0.82
	Oct-96	101,512	61	0.05	0.87
	Nov-96	116,354	42.6	0.04	0.91
	Dec-96	137,045	42.6	0.06	0.96
	Jan-97	146,036	42.6	0.05	1.01
	Feb-97	215,730	63.9	0.11	1.12
	Mar-97	223,222	63.9	0.12	1.24
	Apr-97	263,167	63.9	0.13	1.38
	May-97	223,177	82	0.15	1.53
	Jun-97	234,689	82	0.16	1.69
	Jul-97	117,736	82	0.08	1.77
	Aug-97	50,248	124.9	0.05	1.82
	Sep-97	36,284	124.9	0.04	1.86
	Oct-97	70,207	124.9	0.07	1.93
	Nov-97	102,326	122.5	0.10	2.04
	Dec-97	114,452	122.5	0.12	2.16
	Jan-98	178,387	122.5	0.18	2.34
	Feb-98	178,387	201.6	0.30	2.64
	Mar-98	145,526	201.6	0.24	2.88
	Apr-98	800,075	201.6	1.01	3.89
	May-98	410,905	139.6	0.48	4.37
Jun-98	431,380	139.6	0.50	4.87	
Jul-98	329,835	139.6	0.38	5.25	
Aug-98	473,083	142	0.56	5.82	
Sep-98	513,868	142	0.61	6.42	
Oct-98	493,849	142	0.58	7.01	
Nov-98	498,870	203	0.84	7.85	
12-1-98 to 12-31-98	Dec-98	371,824	203	0.63	8.48
12-31-98 to 1-27-99	Jan-99	337,877	203	0.57	9.05

**TABLE 14**  
**SUMMARY OF MASS VOC REMOVAL ESTIMATES**  
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System	Month of influent analysis	Flow Volume for Period (gallons)	Average Total VOC Concentration (ug/L)	Pounds of VOC Removed For Period (Pounds)	Cumulative VOCs Removed (Pounds)
<b>MACON SOURCE AREA CONTINUED</b>					
1-27-99 to 2-23-99	Feb-99	384,124	499	1.60	10.65
2-23-99 to 3-30-99	Mar-99	539,825	499	2.25	12.90
3-30-99 to 4-29-99	Apr-99	431,729	499	1.80	14.69
4-29-99 to 5-27-99	May-99	388,443	441	1.43	16.12
5-27-99 to 6-24-99	Jun-99	409,066	441	1.50	17.63
6-24-99 to 7-29-99	Jul-99	502,412	441	1.85	19.47
7-29-99 to 8-27-99	Aug-99	228,824	568	1.08	20.56
8-27-99 to 9-27-99	Sep-99	820,215	568	3.88	24.44
9-27-99 to 10-29-99	Oct-99	530,478	568	2.51	26.95
10-29-99 to 11-24-99	Nov-99	390,353	575	1.87	28.82
11-24-99 to 12-30-99	Dec-99	543,545	575	2.81	31.43
12-30-99 to 1-21-00	Jan-00	170,316	575	0.82	32.25
1-21-00 to 2-25-00	Feb-00	357,840	184.5	0.55	32.80
3-1-00 to 3-31-00	Mar-00	335,782	184.5	0.52	33.31
3-31-00 to 4-27-00	Apr-00	331,270	184.5	0.51	33.82
4-27-00 to 5-26-00	May-00	151,212	154	0.19	34.02
5-26-00 to 6-30-00	Jun-00	300,123	154	0.39	34.40
6-30-00 to 7-26-00	Jul-00	231,981	154	0.30	34.70
7-26-00 to 8-29-00	Aug-00	188,494	503	0.76	35.46
8-29-00 to 9-25-00	Sep-00	84,780	503	0.36	35.84
9-25-00 to 10-26-00	Oct-00	180,071	503	0.76	36.59
10-26-00 to 1-26-01	Jan-01	526,024	85	0.37	36.96
1-26-01 to 4-20-01	Apr-01	281,880	85	0.19	37.15
4-20-01 to 7-19-01	Jul-01	228,260	527	0.99	38.14
7-19-01 to 10-18-01	Oct-01	208,250	527	0.91	39.06
11-06-01 to 02-08-02	Jan-02	120,982	662	0.69	39.75
5-1-02 to 7-31-02	Jul-02	166,455	375	0.52	40.27
8/1/02 to 10/31/02	Oct-02	262,381	375	0.82	41.09
11/1/02 to 1/31/03	Jan-03	109,119	375	0.34	41.43
11/1/02 to 3/14/03	Mar-03	16,977	643	0.09	41.52
2/1/03 to 4/30/03	Apr-03	98,452	643	0.53	42.06
5/1/03 to 7/31/03	Jul-03	24,733	70.9	0.01	42.06
8/1/03 to 10/31/03	Oct-03	66,440.3	70.9	0.04	42.10
11/1/03 to 1/31/04	Jan-04	1,061,901	204.0	1.81	43.91
2/1/04 to 4/30/04	Jan-04	764,057.1	204.0	1.30	45.21
5/1/04 to 07/31/04	Jan-04	1,128,293	204.0	1.92	47.12

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**SUMMARY OF MASS VOC REMOVAL ESTIMATES**  
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System	Month of Influent analysis	Flow Volume for Period (gallons)	Average Total VOC Concentration (ug/L)	Pounds of VOC Removed For Period (Pounds)	Cumulative VOCs Removed (Pounds)	
MACON SOURCE AREA CONTINUED						
	08/01/04 to 10/31/04	Jan-04	912,927	204.0	1.55	48.68
	11/01/04 to 01/31/05	Jan-05	648,840	160.5	0.87	49.55
	02/01/05 to 04/30/05	Jan-05	428,952	160.5	0.57	50.12
	5/1/05 to 7/31/05	Aug-05	775,057	105.4	0.88	50.80
	8/1/05 to 10/31/05	Aug-05	451,291	105.4	0.40	51.20
	11/1/05 to 01/31/06	Jan-06	882,380	153.9	1.13	52.33
	2/1/06 to 4/30/06	Jan-06	906,080	153.9	1.16	53.49
	5/1/06 to 7/31/06	Aug-06	479,065	112.4	0.45	53.94
	8/1/06 to 10/29/06	Aug-06	744,809	112.4	0.70	54.64
	10/29/06 to 1/27/07	Jan-07	878,048	91.4	0.87	55.31
	1/27/07 to 4/29/07	Jan-07	893,578	91.4	0.68	55.99
	4/29/07 to 7/29/07	Jul-07	840,780	107.4	0.75	56.74
	7/29/07 to 10/28/07	Jul-07	703,817	107.4	0.63	57.37
	10/28/07 to 2/3/08	Feb-08	766,749	87.5	0.58	57.93
	2/3/08 to 4/27/08	Feb-08	257,284	87.5	0.19	58.12
	4/27/08 to 7/29/08	Aug-08	843,918	88.1	0.47	58.58
	7/29/08 to 10/28/08	Aug-08	608,882	88.1	0.34	58.92
	10/28/08 to 1/31/09	Feb-09	888,226	69.4	0.40	59.32
	1/31/09 to 4/28/09	Feb-09	649,554	69.4	0.32	59.64
	4/28/09 to 7/30/09	Aug-09	825,365	51.9	0.38	59.99
	7/30/09 to 10/29/09	Aug-09	839,963	51.9	0.38	60.36
	10/29/09 to 01/31/10	Jan-10	790,314	28.8	0.18	60.53
	01/31/10 to 4/29/10	Jan-10	661,400	28.8	0.15	60.68
	4/29/10 to 7/30/10	Jan-10	720,744	28.8	0.16	60.84
	7/30/10 to 10/29/10	Oct-10	859,580	87.2	0.82	61.47
	10/29/10 to 1/31/11	Oct-10	131,218	87.2	0.10	61.56
	01/31/11 to 4/29/11	Oct-10	180,095	87.2	0.13	61.69
	4/29/11 to 7/30/11	Sep-11	846,933	13.5	0.07	61.77
	7/30/11 to 10/29/11	Sep-11	518,581	13.5	0.06	61.82
	10/29/11 to 1/31/12	Feb-12	775,843	22.5	0.15	61.97
	01/31/12 to 4/29/12	Feb-12	788,588	22.5	0.15	62.12
	4/29/12 to 7/30/12	Aug-12	473,083	22.4	0.09	62.21
	7/30/12 to 10/29/12	Aug-12	494,322	22.4	0.09	62.30
	10/29/12 to 1/31/13	Apr-13	677,499	18.9	0.11	62.41
	01/31/13 to 4/29/13	Apr-13	807,988	18.9	0.13	62.53
	4/29/13 to 7/30/13	Apr-13	123,205	18.9	0.02	62.55

**TABLE 14  
SUMMARY OF MASS VOC REMOVAL ESTIMATES  
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System	Month of Influent analysis	Flow Volume for Period (gallons)	Average Total VOC Concentration (ug/L)	Pounds of VOC Removed For Period (Pounds)	Cumulative VOCs Removed (Pounds)
<b>MACON SOURCE AREA CONTINUED</b>					
7/30/13 to 10/29/13	Sep-13	634,348	11.8	0.06	82.61
10/29/13 to 1/31/14	Sep-13	460,170	11.8	0.06	82.66
01/31/14 to 4/29/14	Apr-14	673,463	5.4	0.03	82.69
4/29/14 to 7/30/14	Apr-14	688,376	5.4	0.03	82.72

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**SUMMARY OF MASS VOC REMOVAL ESTIMATES**  
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System	Month of Influent analysis	Flow Volume for Period (gallons)	Average Total VOC Concentration (ug/L)	Pounds of VOC Removed For Period (Pounds)	Cumulative VOCs Removed (Pounds)
U/L Macon	Mar-96	375,318	24.0	0.08	0.08
	Apr-96	709,726	24.0	0.14	0.22
	May-96	482,220	23.0	0.09	0.31
	Jun-96	48,305	31.0	0.01	0.33
	Jul-96	759,820	22.0	0.14	0.47
	Aug-96	638,400	31.0	0.16	0.63
	Sep-96	302,506	31.0	0.08	0.71
	Oct-96	640,780	31.0	0.17	0.88
	Nov-96	871,155	25.3	0.18	1.06
	Dec-96	725,549	25.3	0.15	1.21
	Jan-97	596,131	25.3	0.13	1.34
	Feb-97	795,238	24.4	0.16	1.50
	Mar-97	939,710	24.4	0.19	1.69
	Apr-97	918,080	24.4	0.19	1.88
	May-97	999,040	24.0	0.20	2.08
	Jun-97	805,792	24.0	0.12	2.20
	Jul-97	223,859	24.0	0.04	2.24
	Aug-97	911,679	23.0	0.17	2.42
	Sep-97	917,831	23.0	0.18	2.59
	Oct-97	821,135	23.0	0.16	2.75
	Nov-97	140,796	16.0	0.02	2.77
	Dec-97	844,299	16.0	0.11	2.88
	Jan-98	531,692	16.0	0.07	2.95
	Feb-98	1,051,002	22.9	0.20	3.15
	Mar-98	932,266	22.9	0.18	3.33
	Apr-98	662,272	22.9	0.13	3.46
	May-98	876,945	22.3	0.16	3.62
	Jun-98	448,056	22.3	0.08	3.71
	Jul-98	776,195	22.3	0.14	3.85
	Aug-98	857,122	22.5	0.16	4.01
	Sep-98	821,424	22.5	0.15	4.16
	Oct-98	718,543	22.5	0.13	4.30
	Nov-98	251,141	16.5	0.03	4.33
12-1-98 to 12-31-98	Dec-98	713,232	16.5	0.10	4.43
12-31-98 to 1-27-99	Jan-99	835,206	16.5	0.11	4.55
1-27-99 to 2-23-99	Feb-99	586,579	20.3	0.10	4.65
2-23-99 to 3-30-99	Mar-99	1,035,893	20.3	0.18	4.82
3-30-99 to 4-29-99	Apr-99	894,763	20.3	0.15	4.97

**TABLE 14  
SUMMARY OF MASS VOC REMOVAL ESTIMATES  
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System	Month of Influent analysis	Flow Volume for Period (gallons)	Average Total VOC Concentration (ug/L)	Pounds of VOC Removed For Period (Pounds)	Cumulative VOCs Removed (Pounds)
U/L MACON CONTNUED					
4-29-99 to 5-27-99	May-99	828,048	21.0	0.14	4.87
5-27-99 to 6-24-99	Jun-99	809,334	21.0	0.14	5.11
6-24-99 to 7-29-99	Jul-99	582,110	21.0	0.10	5.22
7-29-99 to 8-27-99	Aug-99	635,226	17.0	0.09	5.31
8-27-99 to 9-27-99	Sep-99	788,831	17.0	0.11	5.42
9-27-99 to 10-29-99	Oct-99	894,736	17.0	0.13	5.54
10-29-99 to 11-24-99	Nov-99	646,405	13.5	0.07	5.61
11-24-99 to 12-30-99	Dec-99	575,397	13.5	0.06	5.68
12-30-99 to 1-21-00	Jan-00	261,658	13.5	0.03	5.71
1-21-00 to 2-25-00	Feb-00	161,156	7.8	0.01	5.72
3-1-00 to 3-31-00	Mar-00	308,952	7.8	0.02	5.74
3-31-00 to 4-27-00	Apr-00	416,369	7.8	0.03	5.77
4-27-00 to 5-26-00	May-00	127,597	14.6	0.02	5.78
5-26-00 to 6-30-00	Jun-00	607,951	14.6	0.07	5.86
6-30-00 to 7-26-00	Jul-00	425,691	14.6	0.05	5.91
7-26-00 to 8-29-00	Aug-00	380,931	33.2	0.11	6.01
8-29-00 to 9-25-00	Sep-00	919,139	33.2	0.25	6.27
9-25-00 to 10-26-00	Oct-00	242,990	33.2	0.07	6.34
10-26-00 to 1-26-01	Jan-01	200,354	33.2	0.08	6.39
1-26-01 to 4-20-01	Apr-01	146,019	33.2	0.04	6.43
4-20-01 to 7-19-01	Jul-01	454,181	46.5	0.18	6.61
7-19-01 to 10-16-01	Oct-01	1,966,749	46.5	0.76	7.37
11-06-01 to 02-08-02	Jan-02	7,215,481	4.4	0.26	7.63
5-1-02 to 7-31-02	Jul-02	1,300,736	4.4	0.05	7.68
8/1/02 to 10/31/02	Oct-02	572,440	4.4	0.02	7.70
11/1/02 to 1/31/03	Jan-03	390,408	12.4	0.04	7.74
2/1/03 to 4/30/03	Apr-03	2,545,412	12.4	0.26	8.01
5/1/03 to 7/31/03	Jul-03	1,016,735	0.0	0.00	8.01
8/1/03 to 10/31/03	Oct-03	432,785	0.0	0.00	8.01
11/1/03 to 1/31/04	Jan-04	2,375,008	31.6	0.63	8.63
2/1/04 to 4/30/04	Jan-04	4,041,045	31.6	1.06	9.70
5/1/04 to 07/31/04	Jan-04	1,807,409	31.6	0.48	10.17
08/01/04 to 10/31/04	Jan-04	2,645,862	31.6	0.70	10.87
11/01/04 to 01/31/05	Jan-06	2,171,719	56.5	1.02	11.89
02/01/05 to 04/30/05	Jan-05	4,547,891	56.5	2.14	14.03
5/1/05 to 7/31/05	Aug-05	3,508,177	47.4	1.38	15.42
8/1/05 to 10/31/05	Aug-05	1,990,745	47.4	0.79	16.21

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System	Month of influent analysis	Flow Volume for Period (gallons)	Average Total VOC Concentration (ug/L)	Pounds of VOC Removed For Period (Pounds)	Cumulative VOCs Removed (Pounds)
U/L MACON CONTINUED					
11/1/2005 to 01/31/2006	Jan-06	3,647,820	44.0	1.41	17.82
2/1/06 to 4/30/06	Jan-06	3,838,920	44.0	1.41	19.02
5/1/06 to 7/31/06	Aug-06	2,041,180	39.2	0.67	19.89
8/1/06 to 10/29/06	Aug-06	3,601,130	39.2	1.18	20.87
10/29/06 to 1/27/07	Jan-07	4,023,913	71.4	2.40	23.26
1/27/07 to 4/28/07	Jan-07	4,753,188	71.4	2.83	26.09
4/29/07 to 7/29/07	Jul-07	3,456,544	56.2	1.62	27.71
7/29/07 to 10/28/07	Jul-07	3,901,130	56.2	1.69	29.40
10/28/07 to 2/3/08	Feb-08	1,944,131	48.6	0.79	30.18
2/3/2008 to 4/27/08	Feb-08	970,468	48.6	0.39	30.58
4/27/08 to 7/29/08	Feb-08	4,059,852	48.6	1.64	32.22
7/29/08 to 10/28/08	Aug-08	2,555,381	67.6	1.44	33.66
10/28/08 to 1/31/09	Aug-08	1,566,315	67.6	0.90	34.56
1/31/09 to 4/28/09	Feb-09	3,180,921	48.0	1.28	35.83
4/28/09 to 7/30/09	Feb-09	3,782,497	48.0	1.51	37.34
7/30/09 to 10/29/09	Aug-09	4,467,997	31.5	1.17	38.51
10/29/09 to 01/31/10	Aug-09	3,249,151	31.5	0.85	39.37
01/31/10 to 4/29/10	Aug-09	2,331,489	31.5	0.61	39.98
4/29/10 to 7/30/10	Aug-09	1,844,403	31.5	0.48	40.46
7/30/10 to 10/29/10	Oct-10	3,040,486	83.0	2.10	42.57
10/29/10 to 1/31/11	Oct-10	2,037,079	83.0	1.41	43.98
01/31/11 to 4/29/11	Oct-10	36,536	83.0	0.03	44.00
4/29/11 to 7/30/11	Oct-10	1,147,789	83.0	0.79	44.80
7/30/11 to 10/29/11	Sep-11	2,339,082	23.2	0.45	45.25
10/29/11 to 1/31/12	Sep-11	2,799,048	23.2	0.54	45.79
01/31/12 to 4/29/12	Feb-12	3,306,318	61.4	1.69	47.48
4/29/12 to 7/30/12	Feb-12	2,404,372	61.4	1.23	48.71
7/30/12 to 10/29/12	Aug-12	1,725,302	22.4	0.32	49.04

**TABLE 14  
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System	Month of Influent analysis	Flow Volume for Period (gallons)	Average Total VOC Concentration (ug/L)	Pounds of VOC Removed For Period (Pounds)	Cumulative VOCs Removed (Pounds)
10/29/12 to 1/31/13	Aug-12	1,364,858	22.4	0.25	49.29
01/31/13 to 4/29/13	Apr-13	2,249,860	37.9	0.71	50.00
4/29/13 to 7/30/13	Apr-13	1,389,294	37.9	0.44	50.44
7/30/13 to 10/29/13	Sep-13	1,886,219	20.8	0.34	50.79
10/29/13 to 1/31/14	Sep-13	2,379,191	20.8	0.41	51.20
01/31/14 to 4/29/14	Apr-14	2,810,370	35.9	0.84	52.04
4/29/14 to 7/30/14	Apr-14	2,043,716	35.9	0.61	52.65



