



Michael F. Easley, Governor

William G. Ross Jr., Secretary
North Carolina Department of Environment and Natural Resources

Alan W. Klimek, P.E. Director
Division of Water Quality

RECEIVED
JUL 31 2006
Withers & Ravenel

July 25, 2006

MICHAEL J. MYERS – ENGINEERING & COMPLIANCE MANAGER
HEATER UTILITIES, INC.
POST OFFICE DRAWER 4889
202 MACKENAN DRIVE
CARY, NORTH CAROLINA 27511

Subject: Permit No. WQ0030235
North Chatham Green Initiative
Wastewater Treatment System
Chatham County

Dear Mr. Myers:

In accordance with your permit application received June 8, 2006, and subsequent additional information received July 6, 2006, we are forwarding herewith Permit Number WQ0030235, dated July 25, 2006, to Heater Utilities, Inc. for the construction only of the subject wastewater treatment system.

This permit shall be effective from the date of issuance until June 30, 2011, and shall be subject to the conditions and limitations as specified therein. Please pay particular attention to the monitoring requirements in this permit. Failure to establish an adequate system for collecting and maintaining the required operational information will result in future compliance problems.

If any parts, requirements, or limitations contained in this permit are unacceptable, you have the right to request an adjudicatory hearing upon written request within thirty (30) days following receipt of this permit. This request must be in the form of a written petition, conforming to Chapter 150B of the North Carolina General Statutes, and filed with the Office of Administrative Hearings, 6714 Mail Service Center, Raleigh, NC 27699-6714. Unless such demands are made this permit shall be final and binding.

One set of approved plans and specifications is being forwarded to you. If you need additional information concerning this matter, please contact Nathaniel Thornburg at (919) 715-6160.

Sincerely,

Alan W. Klimek, P.E.

cc: Chatham County Health Department
Raleigh Regional Office, Aquifer Protection Section
Michael C. Wicker, PE – Withers & Ravenel, Inc.
Technical Assistance and Certification Unit
Aquifer Protection Central Files
LAU Files



NORTH CAROLINA
ENVIRONMENTAL MANAGEMENT COMMISSION
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
RALEIGH
WASTEWATER TREATMENT PERMIT

In accordance with the provisions of Article 21 of Chapter 143, General Statutes of North Carolina as amended, and other applicable Laws, Rules, and Regulations

PERMISSION IS HEREBY GRANTED TO

Heater Utilities, Inc.
Chatham County

FOR THE

construction only of a 200,000 gallon per day (GPD) wastewater treatment system consisting of:

an influent pump station with dual 350 gallon per minute (GPM) 25 horsepower (hp) centrifugal pumps rated at 87 feet of total dynamic head (TDH) and audible/visual high water alarms; a mechanically cleaned fine screen with an auxiliary manually cleaned bar screen; a flow splitter box that overflows to the equalization basin; a 50,000 gallon flow equalization basin with two (2) 70 GPM 3 hp submersible centrifugal pumps rated at 27 feet TDH, two (2) 150 cubic feet per minute (CFM) 7.5 hp blowers, and a diffused aeration system; two (2) 2 millimeter (mm) drum screens; two (2) 100,000 gallon Membrane Bio-Reactor (MBR) basins each consisting of: a 13,000 gallon anoxic basin with an anoxic recirculation pump, mixer and flowmeter; a 28,000 gallon fine bubble aeration basin; a 3,000 gallon membrane tank with a 278 GPM membrane mixed liquor recirculation/biosolids wasting pump, a permeate pump and flow meter, and two (2) racks of 36 microfiltration modules each at a loading rate of 15 gallons per day per square foot (GPD/ft²); and two (2) 268 CFM blowers; a chemical clean-in-place system consisting of sodium hypochlorite feed system located in a chemical building on-site; a three (3) zone 56,000 gallon aerobic sludge digester with one (1) 150 CFM 7.5 hp blower with submersed aeration diffusers, three (3) 50 GPM 0.5 hp decant submersible pumps rated at 16 feet TDH, a 200 GPM 3 hp submersible centrifugal sludge transfer pump rated at 23 feet TDH; two (2) 302 GPM ultraviolet (UV) disinfection chambers each with two (2) lamps; a permanent standby generator; an odor control facility; a turbidimeter; a combination reclaimed water/reject water flow meter; and an approximately 1.0 million gallon five (5) day upset tank

to serve the North Chatham Green Initiative with no discharge of wastes to the surface waters, pursuant to the application received June 8, 2006 and subsequent additional information received by the Division, and in conformity with the project plan, specifications, and other supporting data subsequently filed and approved by the Department of Environment and Natural Resources and considered a part of this permit.

This permit shall be effective from the date of issuance until June 30, 2011, and shall be subject to the following specified conditions and limitations:

I. PERFORMANCE STANDARDS

1. The *North Chatham Green Initiative Wastewater Irrigation Agreement* between Heater Utilities, Inc. and the ZR CHATHAM, LLC shall be executed and submitted to the Aquifer Protection Section's Central and Raleigh Regional Offices with the application to modify the permit to construct and operate the disposal system. This agreement shall include the following:
 - a. The agreement shall indicate the responsible party for properly storing and irrigating the entire wastewater flow in accordance with all conditions outlined in a permit issued to Heater Utilities, Inc. If the responsible party is Heater Utilities, Inc., the agreement shall stipulate measures to be taken to ensure Heater Utilities, Inc. has the operational authority to properly manage the wastewater including when, where, and the duration of effluent irrigation events.
 - b. The responsible party for irrigation shall provide a certified wastewater irrigation operator at all times in accordance with 15A NCAC 8G, including site visitation requirements.
 - c. The agreement shall also indicate that aesthetic desires or management of the common green areas for the purposes of use shall not be justifiable reasons for violating conditions of the wastewater permit including the maintenance of adequate effluent storage capacity.
 - d. The agreement shall also indicate the responsible party for conducting all sampling as required by the permit, as well as, the responsible party for record keeping with regards to storage or irrigation of effluent wastewater.
 - e. The agreement shall indicate provisions for addressing enforcement and civil penalties in instances where the ZR CHATHAM, LLC is responsible for violations of the permit issued to Heater Utilities, Inc.
 - f. The agreement may not be modified or negated without approval by the Division. In the case of the sale of the Company or any of the common green area utilized for wastewater disposal, disclosure of the agreement must be made and acceptance by the purchaser must occur prior to the ZR CHATHAM, LLC being relieved of any identified responsibilities.
2. Upon completion of construction of this permitted facility, a certification must be received from a professional engineer certifying that the permitted facility has been installed in accordance with this permit, the approved plans and specifications, and other supporting materials. If this project is to be completed in phases and partially certified, you shall retain the responsibility to track further construction approved under the same permit, and shall provide a final certificate of completion once the entire project has been completed. Mail the Certification to the Land Application Unit, 1636 Mail Service Center, Raleigh, NC 27699-1636.
3. The wastewater treatment facilities shall be effectively maintained and operated at all times so that there is no discharge to the surface waters, nor any contamination of ground waters, which will render them unsatisfactory for normal use. In the event that the facilities fail to perform satisfactorily, including the creation of nuisance conditions, the Permittee shall take immediate corrective actions including those actions that may be required by the Division of Water Quality (Division), such as the construction of additional or replacement wastewater treatment facilities.
4. The issuance of this permit shall not relieve the Permittee of the responsibility for damages to surface water or ground water resulting from the operation of this facility.
5. The residuals generated from these treatment facilities must be disposed in accordance with General Statute 143-215.1 and in a manner approved by the Division.
6. Diversion or bypassing of the untreated wastewater from the treatment facilities is prohibited.

7. The following buffers shall be maintained:
 - a. 100 feet between wastewater treatment units and wells,
 - b. 50 feet between five (5) day upset tank and property lines, and
 - c. 50 feet between wastewater treatment units and property lines.
8. Public access to the wastewater treatment plant shall be controlled.

II. OPERATION AND MAINTENANCE REQUIREMENTS

1. The facilities shall be properly maintained and operated at all times.
2. Upon classification of the wastewater treatment facility by the Water Pollution Control System Operators Certification Commission (WPCSOCC), the Permittee shall designate and employ a certified operator to be in responsible charge (ORC) and one or more certified operator(s) to be back-up ORC(s) of the facilities in accordance with 15A NCAC 8G .0201. The ORC shall visit the facilities in accordance with 15A NCAC 8G .0204 or as specified in this permit and shall comply with all other conditions specified in these rules.
3. The facilities shall be effectively maintained and operated as a non-discharge system to prevent the discharge of any wastewater resulting from the operation of this facility.
4. An automatically activated standby power source shall be on site and operational at all times. If a generator is employed as an alternate power supply, it shall be tested weekly by interrupting the primary power source.
5. Freeboard in the five (5) day upset tank shall not be less than two (2) feet at any time.
6. All wastewater shall be routed to the five-day holding tank should the limit for fecal coliform (daily maximum concentration of 25 per 100 ml) or turbidity (instantaneous maximum of 10 NTU) be exceeded, until such time that the problems associated with the treatment capability of the wastewater treatment plant have been corrected. The wastewater in the five-day holding tank shall be pumped back to the treatment plant for re-treatment.

III. MONITORING AND REPORTING REQUIREMENTS

1. Any monitoring (including groundwater, surface water, soil or plant tissue analyses) deemed necessary by the Division to insure surface and ground water protection will be established and an acceptable sampling reporting schedule shall be followed.
2. Influent flow shall be continuously monitored and daily flow values shall be reported on Form NDMR.

The Permittee shall install an appropriate flow measurement device consistent with approved engineering and scientific practices to ensure the accuracy and reliability of influent flow measurement. Flow measurement devices selected shall be capable of measuring flows with a maximum deviation of less than 10 percent from true flow, accurately calibrated at a minimum of once per year, and maintained to ensure that the accuracy of the measurements is consistent with the accepted capability of that type of device. The Permittee shall keep records of flow measurement device calibration on file for a period of at least three years. At a minimum, data to be included in this documentation shall be:

- a. Date of flow measurement device calibration
- b. Name of person performing calibration
- c. Percent from true flow

3. As an indicator of proper operation and maintenance, the facility shall produce an effluent in compliance with the following limitations:

Parameter	Monthly Average ^a	Daily (Instantaneous) Maximum ^c
Flow	0 GPD	
BOD ₅ (5-day, 20°C)	10 mg/l	15 mg/l
NH ₃ as N	4 mg/l	6 mg/l
TSS	5 mg/l	10 mg/l
Fecal Coliform	14 per 100 ml ^b	25 per 100 ml
Turbidity		10 NTU

The effluent pH shall not be less than 6.0 standard units nor greater than 9.0 standard units.

- ^a Monthly averages for all but fecal coliform shall be the arithmetic mean of all samples collected during the reporting period.
- ^b Monthly average for fecal coliform shall be the geometric mean of all samples collected during the reporting period.
- ^c Daily maximum shall be the maximum value of all samples collected during the reporting period.

The Permittee shall monitor the effluent from the subject facilities for the following parameters:

Parameter	Sampling Point	Sampling Frequency	Type of Sample
Flow	Effluent	Continuous	Recording
Turbidity	Effluent	Continuous	Recording
BOD ₅ (5-day, 20°C)	Effluent	*2/Month	Composite
NH ₃ as N	Effluent	*2/Month	Composite
TSS	Effluent	*2/Month	Composite
Fecal Coliform	Effluent	*2/Month	Grab
Settleable Matter	Effluent	Daily	Grab
NO ₃	Effluent	**Triannually	Grab
TDS	Effluent	**Triannually	Grab
TOC	Effluent	**Triannually	Grab
Chloride	Effluent	**Triannually	Grab
pH	Effluent	**Triannually	Grab

* 2/Month sampling frequency only during the months of April through October. During the remainder of the year, these parameters shall be monitored monthly.

** Triannually sampling shall be conducted during March, July and November.

If Groundwater sampling indicates or predicts problems with the compliance with Groundwater Standards, this permit will be modified to include additional and/or more restrictive limitations.

4. Freeboard in the five (5) day upset tank shall be recorded weekly.

5. Three (3) copies of all monitoring data [as specified in Conditions III(2) and III(3)] on Form NDMR-1 and three (3) copies of all operation records [as specified in Condition III(4)] on Form NDAR-1 shall be submitted monthly on or before the last day of the following month. All information shall be submitted to the following address:

NC Division of Water Quality
Information Processing Unit
1617 Mail Service Center
Raleigh, North Carolina 27699-1617

6. A record shall be maintained of all residuals removed from this facility. This record shall include the name of the hauler, permit authorizing the disposal or a letter from a municipality agreeing to accept the residuals, date the residuals were hauled, and volume of residuals removed.
7. A maintenance log shall be maintained at this facility including but not limited to the following items:
 - a. Daily sampling results of dissolved oxygen in the aeration basin and at the clarifier weir.
 - b. Visual observations of the plant and plant site.
 - c. Record of preventative maintenance (changing of filters, adjusting belt tensions, alarm testing, diffuser inspections and cleanings, etc.).
 - d. Date of calibration of flow measurement device.
 - e. Date and results of power interruption testing on alternate power supply.
8. **Noncompliance Notification:**

The Permittee shall report by telephone to the Raleigh Regional Office, telephone number 791-4200, as soon as possible, but in no case more than 24 hours or on the next working day following the occurrence or first knowledge of the occurrence of any of the following:

- a. Any occurrence at the wastewater treatment facility which results in the treatment of significant amounts of wastes which are abnormal in quantity or characteristic, such as the dumping of the contents of a sludge digester; the known passage of a slug of hazardous substance through the facility; or any other unusual circumstances.
- b. Any process unit failure, due to known or unknown reasons, that render the facility incapable of adequate wastewater treatment such as mechanical or electrical failures of pumps, aerators, compressors, etc.
- c. Any failure of a pumping station, sewer line, or treatment facility resulting in a by-pass directly to receiving waters without treatment of all or any portion of the influent to such station or facility.
- d. Any time that self-monitoring information indicates that the facility has gone out of compliance with its permit limitations.

Occurrences outside normal business hours may also be reported to the Division's Emergency Response personnel at telephone number (800) 662-7956, (800) 858-0368, or (919) 733-3300. Persons reporting such occurrences by telephone shall also file a written report in letter form within five (5) days following first knowledge of the occurrence. This report must outline the actions taken or proposed to be taken to ensure that the problem does not recur.

IV. GROUNDWATER REQUIREMENTS

1. Any groundwater quality monitoring, as deemed necessary by the Division, shall be provided.

V. INSPECTIONS

1. Adequate inspection, maintenance, and cleaning shall be provided by the Permittee to insure proper operation of the subject facilities.
2. The Permittee or his designee shall inspect the wastewater treatment facilities to prevent malfunctions and deterioration, operator errors and discharges which may cause or lead to the release of wastes to the environment, a threat to human health, or a nuisance. The Permittee shall keep an inspection log or summary including at least the date and time of inspection, observations made, and any maintenance, repairs, or corrective actions taken by the Permittee. This log of inspections shall be maintained by the Permittee for a period of three years from the date of the inspection and shall be made available upon request to the Division or other permitting authority.
3. Any duly authorized officer, employee, or representative of the Division may, upon presentation of credentials, enter and inspect any property, premises or place on or related the facility at any reasonable time for the purpose of determining compliance with this permit; may inspect or copy any records that must be maintained under the terms and conditions of this permit, and may obtain samples of groundwater, surface water, or leachate.

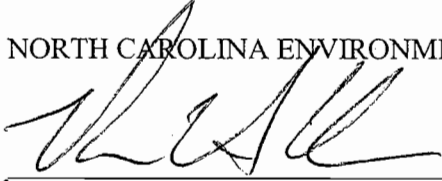
VI. GENERAL CONDITIONS


1. This permit shall become voidable unless the facilities are constructed in accordance with the conditions of this permit, the approved plans and specifications, and other supporting data.
2. This permit is effective only with respect to the nature and volume of wastes described in the application and other supporting data.
3. This permit is not transferable. In the event there is a desire for the facilities to change ownership, or there is a name change of the Permittee, a formal permit request must be submitted to the Division accompanied by an application fee, documentation from the parties involved, and other supporting materials as may be appropriate. The approval of this request will be considered on its merits and may or may not be approved.
4. Failure to abide by the conditions and limitations contained in this permit may subject the Permittee to an enforcement action by the Division in accordance with North Carolina General Statute 143-215.6A to 143-215.6C.
5. The issuance of this permit does not exempt the Permittee from complying with any and all statutes, rules, regulations, or ordinances which may be imposed by other government agencies (local, state, and federal) which have jurisdiction, including but not limited to applicable river buffer rules in 15A NCAC 2B.0200, erosion and sedimentation control requirements in 15A NCAC Chapter 4 and under the Division's General Permit NCG010000, and any requirements pertaining to wetlands under 15A NCAC 2B .0200 and 2H .0500.
6. The Permittee shall retain a set of approved plans and specifications for the subject facility for the life of the project.
7. The Permittee shall pay the annual administering and compliance fee within thirty days of being billed by the Division. Failure to pay the fee accordingly may cause the Division to initiate action to revoke this permit as specified by 15 NCAC 2H .0205 (c)(4).

8. The Permittee, at least six (6) months prior to the expiration of this permit, shall request its extension. Upon receipt of the request, the Commission will review the adequacy of the facilities described therein, and if warranted, will extend the permit for such period of time and under such conditions and limitations as it may deem appropriate.

Permit issued this the 25th day of July 2006

NORTH CAROLINA ENVIRONMENTAL MANAGEMENT COMMISSION



 Alan W. Klimek, P.E., Director

Division of Water Quality

By Authority of the Environmental Management Commission

Permit Number WQ0030235

Permit No. WQ0030235
July 25, 2006

ENGINEER'S CERTIFICATION

_____ Partial _____ Final

I, _____, as a duly registered Professional Engineer in the State of North Carolina, having been authorized to observe (periodically, weekly, full time) the construction of the project,

Project Name

Location and County

for the Permittee hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of this permit, the approved plans and specifications, and other supporting materials.

Signature _____ Registration No. _____

Date _____

WQ0030235 – North Chatham Green Initiative WWTF

11551 US 15-501 N

Chapel Hill, NC 27517

Latitude: 35° 50' 18"

Longitude: -79° 04' 57"



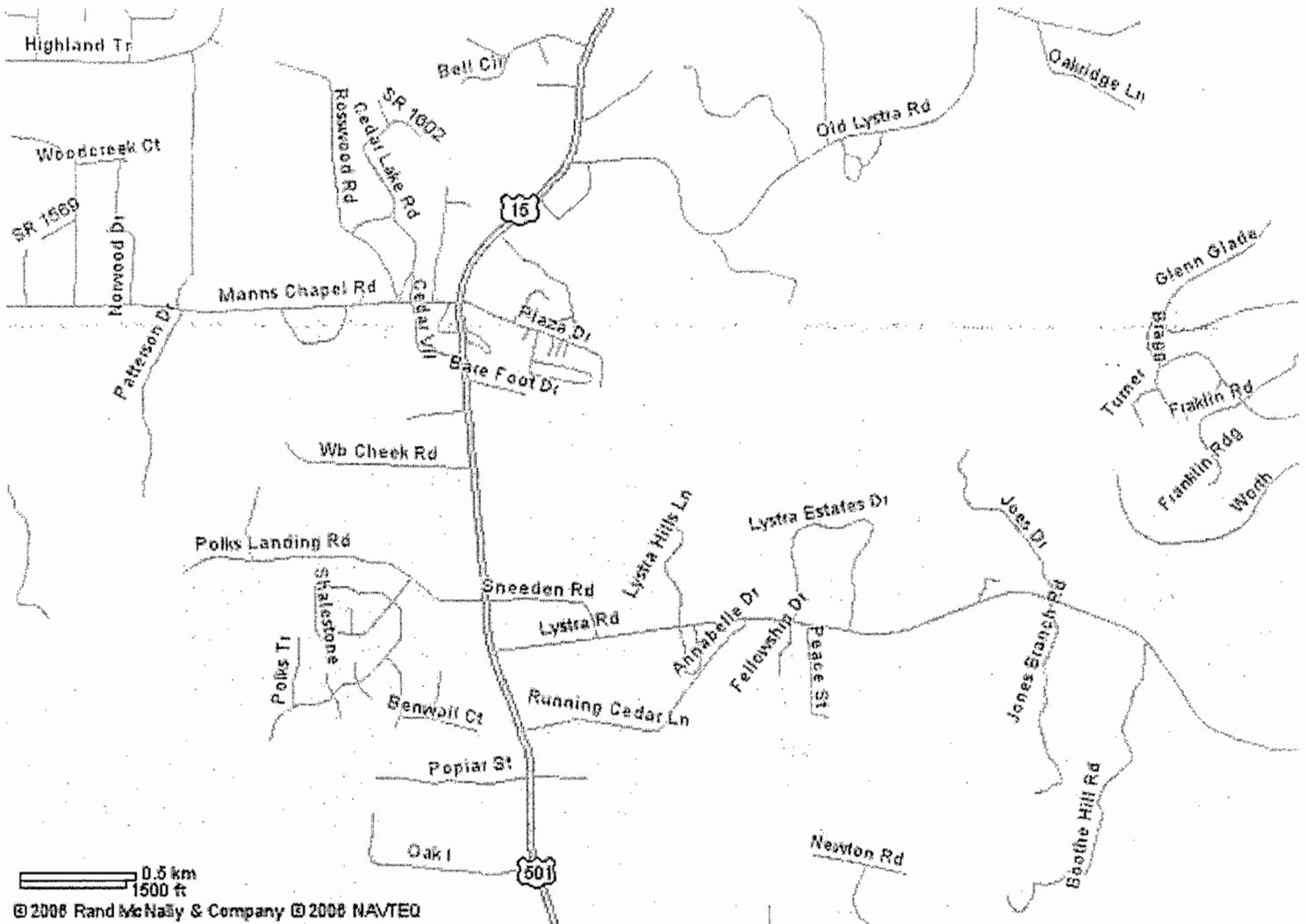
WQ0030235 – North Chatham Green Initiative WWTF

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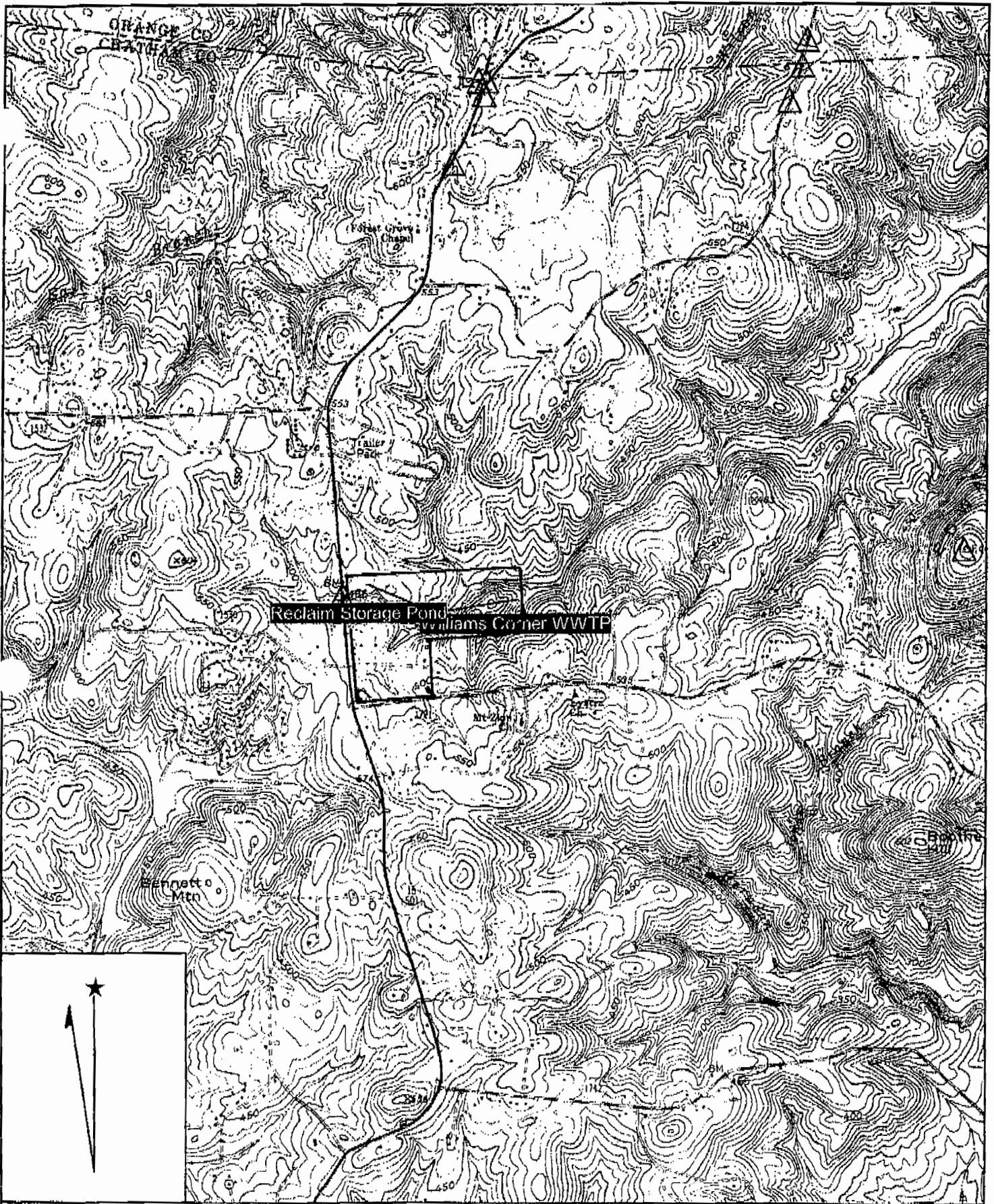
Chapel Hill, NC 27517

Latitude: 35° 50' 18"

Longitude: -79° 04' 57"



0.5 km
1500 ft
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Name: FARRINGTON
 Date: 1/9/2006
 Scale: 1 inch equals 2000 feet

Location: 035° 50' 14.51" N 079° 04' 54.56" W
 Caption: Williams Corner Reclaim Water Treatment and Disposal Facilities

