



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

August 11, 2005

Michael Myers, PE, Engineering and Compliance Manager
Heater Utilities, Inc.
202 Mackenan Court
Cary, NC 27511

Subject: Permit No. WQ0029022
The Homestead Phase 1
Pressure Sewer Extension
Chatham County

Dear Mr. Myers:

In accordance with your permit application received June 24, 2005, and subsequent additional information received July 21, 2005 and August 3, 2005, we are forwarding herewith Permit No. WQ0029022 dated August 11, 2005, to Heater Utilities, Inc. for the construction and operation of the subject wastewater collection extension. This permit shall be effective from the date of issuance until rescinded and shall be subject to the conditions and limitations as specified therein.

Please pay particular attention to the following permit conditions:

- o Permit Condition 3 requires that the wastewater collection facilities be properly operated and maintained in accordance with 15A NCAC 2H .0227 or any individual system-wide collection system permit issued to the Permittee.
- o Permit Condition 5 restricts use of this permitted system until the receiving treatment plant is constructed, certified and operational.
- o Permit Condition 17 grants a variance to allow a simplex pump station at the guard house due to the low flows expected.

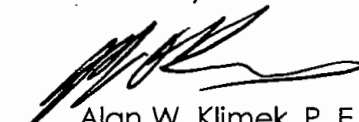
Permitting of this project does not constitute an acceptance of any part of the project that does not meet 15A NCAC 2H .0200; the Division of Water Quality's (Division) Gravity Sewer Minimum Design Criteria adopted February 12, 1996 as applicable; and the Division's Minimum Design Criteria for the Fast-Track Permitting of Pump Stations and Force Mains adopted June 1, 2000 as applicable, unless specifically mentioned herein. Division approval is based on acceptance of the certification provided by a North Carolina-licensed Professional Engineer in the application. It shall be the Permittee's responsibility to ensure that the as-constructed project meets the appropriate design criteria and rules. Failure to comply may result in penalties in accordance with North Carolina General Statute §143-215.6A through §143-215.6C, construction of additional or replacement wastewater collection facilities, and/or referral of the North Carolina-licensed Professional Engineer to the licensing board.

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 30 days following receipt of this permit. This request must be in the form of a written petition, conforming to Chapter 150B of 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.

Note that the Division has reorganized. For our new organizational chart, see http://h2o.enr.state.nc.us/documents/dwq_orgchart.pdf. All sewer related matters are now handled through the Pretreatment, Emergency Response and Collection Systems Unit under the Point Source Branch EXCEPT FOR FAST-TRACK SEWER PERMITTING WHICH CONTINUES TO BE ADMINISTERED THROUGH OUR REGIONAL OFFICES. The Unit is located on the 13th floor of the Archdale building in downtown Raleigh. Please ensure the letterhead information is used for all correspondence to ensure timely delivery.

One set of approved plans and specifications is being forwarded to you. If you need additional information concerning this matter, please contact Marie Doklovic at (919) 733-5083 extension 371.

Sincerely



Alan W. Klimek, P. E.

for

cc:Chatham County Health Department
Raleigh Regional Office, Water Quality Section (Permit WQ0024844)
Mike Zaccardo, PE, The CE Group Inc. (1051 Pemberton Hill Rd, Ste 201, Apex, NC 27502)
Water Quality Central Files
PERCS (formerly NDPU) Files

NORTH CAROLINA
ENVIRONMENTAL MANAGEMENT COMMISSION
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
RALEIGH
WASTEWATER COLLECTION 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 and operation of a pressure sewer collection system consisting of 106, 15-35 GPM simplex pump stations with pre-cast concrete wet well, on-site audible and visual high water alarms; approximately 2,970 linear feet of 2-inch pressure sewer; approximately 2,775 linear feet of 3-inch pressure sewer; approximately 1,045 linear feet of 4-inch pressure sewer; approximately 2,611 linear feet of 6-inch pressure sewer; approximately 2,370 linear feet of 8-inch pressure sewer; and approximately 1,550 linear feet of 10-inch pressure sewer to serve 105, 4-bedroom lots and 1 guard house for The Homestead Phase 1 project, and the discharge of 50,500 GPD of collected wastewater into the Homestead Development's existing sewerage system, pursuant to the application received June 24, 2005, and subsequent additional information received by the Division, and in conformity with the project plans, 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 rescinded and shall be subject to the following specified conditions and limitations:

1. This permit shall become revocable unless the wastewater collection facilities are constructed in accordance with the conditions of this permit; 15A NCAC 2H .0200; the Division of Water Quality's (Division) Gravity Sewer Minimum Design Criteria adopted February 12, 1996 as applicable; the Division's Minimum Design Criteria for the Fast-Track Permitting of Pump Stations and Force Mains adopted June 1, 2000 as applicable; and other supporting materials unless specifically mentioned herein.
2. This permit is effective only with respect to the nature and volume of wastes described in the application and other supporting data.

3. The wastewater collection facilities shall be properly maintained and operated at all times. The Permittee shall maintain compliance with an individual system-wide collection system permit for the operation and maintenance of these facilities as required by 15A NCAC 2H .0227. If an individual permit is not required, the following performance criteria shall be met as provided in 15A NCAC 2H .0227:
 - a. The sewer system shall be effectively maintained and operated at all times to prevent discharge to land or surface waters, and any contravention of the groundwater standards in 15A NCAC 2L .0200 or the surface water standards in 15A NCAC 2B .0200.
 - b. A map of the sewer system shall be developed and shall be actively maintained.
 - c. An operation and maintenance plan shall be developed and implemented.
 - d. Pump stations that are not connected to a telemetry system shall be inspected every day (i.e. 365 days per year). Pump stations that are connected to a telemetry system shall be inspected at least once per week. This requirement does not apply to pump stations serving a single building associated with a properly permitted pressure sewer system.
 - e. High-priority sewer lines shall be inspected at least once per every six-month period of time.
 - f. A general observation of the entire sewer system shall be conducted at least once per year.
 - g. Inspection and maintenance records shall be maintained for a period of at least three years.
 - h. Overflows and bypasses shall be reported to the appropriate Division regional office in accordance with 15A NCAC 2B .0506(a), and public notice shall be provided as required by North Carolina General Statute §143-215.1C.
4. The sewage and wastewater collected by this system shall be treated in the Homestead Development Wastewater Treatment and Reclaimed Water Utilization Facility (Non-Discharge Permit No. WQ0024844) prior to being land applied by spray irrigation.
5. No flow shall be made tributary to the subject sewer system permitted herein until the wastewater treatment plant (Permit No. WQ0024844) has been constructed and the engineer's certification has been received by the Division of Water Quality.
6. 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 of Water Quality (Division) accompanied by 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.
7. Construction of the sewers, pump station(s) and force main shall be scheduled so as not to interrupt service by the existing utilities nor result in an overflow or bypass discharge of wastewater to the surface waters of the State.
8. Per 15A NCAC 2H .0220, upon completion of construction and **prior to operation** of these permitted facilities, the completed Engineering Certification form attached to this permit shall be submitted with the required supporting documents to the address provided on the form. A complete certification is one where the form is fully executed and the supporting documents are provided as applicable.

9. A copy of the approved plans and specifications shall be maintained on file by the Permittee for the life of the wastewater collection facilities.
10. Failure to abide by the conditions and limitations contained in this permit; 15A NCAC 2H .0200; the Division's Gravity Sewer Design Criteria adopted February 12, 1996 as applicable; the Division's Minimum Design Criteria for the Fast-Track Permitting of Pump Station and Force Mains adopted June 1, 2000 as applicable; and other supporting materials may subject the Permittee to an enforcement action by the Division, in accordance with North Carolina General Statutes §143-215.6A through §143-215.6C.
11. The issuance of this permit does not exempt the Permittee from complying with any and all statutes, rules, regulations, or ordinances that may be imposed by other government agencies (i.e., local, state, and federal) having jurisdiction, including but not limited to applicable river buffer rules in 15A NCAC 2B .0200, soil 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 15A NCAC 2H .0500.
12. The Permittee shall provide the following items for the pressure sewer system:
 - a. Pump on/off elevations located so that 2-8 pumping cycles may be achieved per hour in any centralized pump station serving more than one building.
 - b. At least 24 hours of storage capacity above the pump-on activation level for any simplex pump station serving a single family residence.
 - c. An air relief valve located at all high points along the force main.
 - d. A screened vent for the wet well.
 - e. Fillets located in the wet well(s) at the intersection of the flooring and side walls.
 - f. Three feet of cover (minimum) over the force main or the use of ferrous material where three feet cannot be maintained.
 - g. Sufficient devices which will protect the pump station from vandals.
 - h. Flood protection if the pump station is located below the 100-year flood elevation.
 - i. Adherence with the following minimum separations:
 - (i) Storm sewers (vertical) 12 inches
 - (ii) Water mains (vertical-water over sewer) 18 inches or (horizontal) 10 feet
 - (iii) In benched trenches (vertical) 18 inches
 - (iv) Any private or public water supply source, including any WS-I waters or Class I or Class II impounded reservoirs used as a source of drinking water 100 feet
 - (v) Waters classified WS (other than WS-I), B, SA, ORW, HQW, or SB [from normal high water (or tide elevation)] 50 feet
 - (vi) Any other stream, lake or impoundment 10 feet
 - (vii) Any building foundation 5 feet
 - (viii) Any basement 10 feet
 - (ix) Top slope of embankment or cuts of 2 feet or more vertical height 10 feet
 - (x) Drainage systems
 - (I) Interceptor drains 5 feet
 - (II) Ground water lowering and surface drainage ditches 10 feet
 - (xi) Any swimming pool 10 feet
 - (xii) Ferrous sewer pipe with joints equivalent to water main standards, shall be used where these minimum separations cannot be maintained. The minimum separation shall however not be less than 25 feet from a private well or 50 feet from a public water supply well;

13. In the event that the facilities fail to perform satisfactorily, including the creation of nuisance conditions, the Permittee shall take immediate corrective action, including those that may be required by this Division, such as the construction of additional or replacement wastewater collection facilities.

14. Noncompliance Notification:

The Permittee shall verbally report to a water quality staff member at the Raleigh Regional Office, telephone number (919) 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 either of the following:

- a. Any process unit failure, due to known or unknown reasons, that render the facility incapable of adequate wastewater transport such as mechanical or electrical failures of pumps, line blockage or breakage, etc.
- b. Any failure of a pumping station or sewer line resulting in a by-pass directly to receiving waters without treatment of all or any portion of the influent to such station or facility.

Voice mail messages or faxed information is permissible but this shall not be considered as the initial verbal report. Overflows and spills occurring outside normal business hours may also be reported to the Division of Emergency Management at telephone number (800) 858-0368 or (919) 733-3300. Persons reporting any of the above occurrences shall file a spill report by completing Part I of Form CS-SSO (or the most current Division approved form), within five days following first knowledge of the occurrence. This report shall outline the actions taken or proposed to ensure that the problem does not recur. Per Condition I(2), Part II of Form CS-SSO (or the most current Division approved form) can also be completed to show that the SSO was beyond control.

15. The Permittee shall maintain on hand for immediate installation a supply of spare, fully operational pump units of each type used in the pressure sewer system. The number of pumps on hand shall not be less than 10 percent of the number of installed units or one unit, whichever is greater.
16. Each pump station shall be clearly and conspicuously posted with the telephone number of the owner/operator of the pressure sewer system and instructions to call the number in the event of high water alarm activation.
17. A variance is granted to allow a simplex pump station to serve the guard house due to the low flows expected.

Permit issued this the 11th day of August, 2005

NORTH CAROLINA ENVIRONMENTAL MANAGEMENT COMMISSION



Alan W. Klimek, P. E., Director
Division of Water Quality
By Authority of the Environmental Management Commission

Permit Number WQ0029022

Permit No. WQ0029022
August 11, 2005

System Description: 106, 15-35 GPM simplex pump stations with pre-cast concrete wet well, on-site audible and visual high water alarms; approximately 2,970 linear feet of 2-inch pressure sewer; approximately 2,775 linear feet of 3-inch pressure sewer; approximately 1,045 linear feet of 4-inch pressure sewer; approximately 2,611 linear feet of 6-inch pressure sewer; approximately 2,370 linear feet of 8-inch pressure sewer; and approximately 1,550 linear feet of 10-inch pressure sewer to serve 105, 4-bedroom lots and 1 guard house

Complete and submit this form to the permit issuing office as indicated below with the following:

- One copy of the project record drawings (plan & profile views of sewer lines) of the wastewater collection system extension
- Changes to the project should be clearly identified on the record drawings or in written summary form. Permit modifications are required for any changes resulting in non-compliance with this permit, regulations or minimum design criteria.

This project shall not be considered complete nor allowed to operate until this Engineer's Certification and all required supporting documentation have been received by the Division. **Therefore, it is highly recommended that this certification be sent in a manner that provides proof of receipt by the Division.**

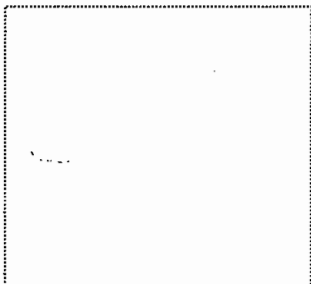
ENGINEER'S CERTIFICATION

☐ 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 subject project 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 of this permit; 15A NCAC 2H .0200; the Division of Water Quality's (Division) Gravity Sewer Minimum Design Criteria adopted February 12, 1996 as applicable; the Division's Minimum Design Criteria for the Fast-Track Permitting of Pump Stations and Force Mains adopted June 1, 2000 as applicable; and other supporting materials.

North Carolina Professional Engineer's seal, signature, and date:



**SEND THIS FORM & SUPPORTING DOCUMENTATION
WITH REQUIRED ATTACHMENTS
TO THE FOLLOWING ADDRESS**

**K MARIE DOKLOVIC, PE
PRETREATMENT, EMERGENCY RESPONSE & COLLECTION SYSTEMS UNIT
1617 MAIL SERVICE CENTER
RALEIGH NC 27699-1617**

The Permittee is responsible for tracking all partial certifications up until a final certification is received. Any wastewater flow made tributary to the wastewater collection system extension prior to completion of this Engineer's Certification shall be considered a violation of the permit and shall subject the Permittee to appropriate enforcement actions.



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

March 22, 2005

Jerry H. Tweed
Heater Utilities, Inc.
202 MacKenan Court
Cary, NC 27511

Subject: Permit No. WQ0024844
Homestead Development
Wastewater Treatment and
Reclaimed Water Utilization System
Chatham County

Dear Mr. Tweed:

In accordance with your permit application received February 3, 2005, and subsequent additional information received March 3, 2005, we are forwarding herewith Permit Number. WQ0024844, dated March 22, 2005, to Heater Utilities, Inc. for the construction and operation of the subject wastewater treatment and reclaimed water utilization system.

This permit shall be effective from the date of issuance until February 28, 2010, 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. Please note that a **sedimentation and erosion control plan must be submitted and approved by the Land Quality Section prior to construction. In addition, any changes required by the Dam Safety Permit shall be approved by the Division of Water Quality prior to construction (See Condition I.10). The Permittee shall also complete an amended site evaluation performed after the course is constructed and await written permission from the Division prior to construction (Condition I.12).**

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
North Carolina
Naturally

Aquifer Protection Section
Internet: <http://h2o.enr.state.nc.us>

1636 Mail Service Center
2728 Capital Boulevard


Raleigh, NC 27699-1636
Raleigh, NC 27604

Phone (919) 733-3221
Fax (919) 715-0588
Fax (919) 715-6048

Customer Service
1-877-623-6748

One set of approved plans and specifications is being forwarded to you. If you need additional information concerning this matter, please contact Michelle McKay at (919) 715-6187.

Sincerely,



Alan W. Klimek, P.E.

cc: Chatham County Health Department
Raleigh Regional Office, Aquifer Protection Section
W. Lee Fleming, J.R., P.E.
Jim Beeson, S&EC, P.A.
Alan Gaines, Jordon Lake, LLC
Scott Frederick, SW & E Group, LLC
Mark Ashness, CE Group, Inc.
Ed Andrew, Edwin Andrews & Assoc., P.C.
Steven Levitas, Kilpatrick Stockton, LLP
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 AND RECLAIMED WATER UTILIZATION 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 and operation of a 165,000 gallons per day (GPD) wastewater treatment and reclaimed water irrigation system consisting of the following:

a 120,000 GPD Phase I wastewater treatment system serving up to 999 bedrooms and a 100 GPD guardhouse and consisting of a 42,000 gallon flow equalization tank with two (2) 135 gallon per minute (GPM) pumps and one (1) 175 cubic feet per minute (cfm) blower, a manually cleaned bar screen, a flow splitter box, two (2) 98,000 gallon aeration basins with two (2) 500 cfm blowers each, two (2) 15,400 gallon clarifiers each with one (1) variable rate sludge pump, one (1) 31,600 gallon sludge holding basin, two (2) 7.5 feet by 7.5 feet tertiary filters, a clearwell with three (3) 425 GPM pumps, a mudwell with two (2) 150 GPM pumps, two (2) UV disinfection units with eight (8) bulbs each, a chlorine contact basin, dechlorination, and an ultrasonic effluent flow measuring device;

a 60,000 GPD Phase II wastewater treatment system serving up to 363 additional bedrooms and a 1,450 GPD tennis/swim amenity area and consisting of a 20,600 gallon flow equalization tank and one (1) 175 cubic foot per minute (cfm) blower, one (1) 98,000 gallon aeration basin with one (1) 500 cfm blower, one (1) 15,400 gallon clarifier with one (1) variable rate sludge pump, one (1) 15,800 gallon sludge holding basin, one 7.5 feet by 7.5 feet tertiary filter, a 4,222 gallon clearwell, and 5,000 gallon mudwell, a 2,975 gallon chlorine contact chamber, and a 1,775 dechlorination chamber;

a 16.9 million gallon (MG) storage pond, manual valves to redirect flow if turbidity is greater than 10 NTU to a 0.89 MG five day upset pond, a 130.8 acre irrigation area consisting of 34 zones and an onsite generator with automatic transfer switch capable of powering all essential units to serve the Homestead Development with no discharge of wastes to the surface waters, pursuant to the application received February 3, 2005 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 February 28, 2010, and shall be subject to the following specified conditions and limitations:

I. PERFORMANCE STANDARDS

1. Upon completion of construction and prior to operation 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.
2. The Raleigh Regional Office, telephone number (919) 571-4700, shall be notified at least forty-eight (48) hours in advance of operation of the installed facilities so that an in-place inspection can be made. Such notification to the regional supervisor shall be made during the normal office hours from 8:00 a.m. until 5:00 p.m. on Monday through Friday, excluding State Holidays.
3. The reclaimed water utilization 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 or failure of the irrigation area to adequately assimilate the wastewater, 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 and disposal 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 wetted areas and water supply wells,
 - b. 100 feet between wetted areas and waters classified as SA,
 - c. 25 feet between wetted areas and surface waters not classified as SA,
 - d. 100 feet between wastewater treatment units and wells,
 - e. 50 feet between reclaimed water storage/irrigation ponds and property lines, and
 - f. 50 feet between wastewater treatment units and property lines.
8. Public access to the irrigation sites shall be controlled during active site use. Such controls may include the posting of signs showing the activities being conducted at each site. A sign shall be posted in plain sight in the guardhouse showing these activities.
9. The disposal system shall be connected to a rain or moisture sensor that shall indicate when wastewater application is not appropriate in accordance with Condition II(4) of this permit.
10. Prior to construction, the Division of Water Quality shall approve any changes to the inclement weather storage pond required from a dam safety permit issued by the Division of Land Resources.

11. The following shall be requirements for the reclaimed water distribution, storage, and utilization facilities:
 - a. All reclaimed water valves, storage facilities, and outlets shall be tagged or labeled to warn the public or employees that the water is not intended for drinking. Where appropriate, such warning shall inform the public or employees to avoid contact with the water.
 - b. All reclaimed water piping, valves, outlets, and other appurtenances shall be color-coded, taped, or otherwise marked to identify the source of the water as being reclaimed water.
 - i. All reclaimed water piping and appurtenances shall be either colored purple (i.e., Pantone 522) and embossed or integrally stamped or marked "CAUTION: RECLAIMED WATER – DO NOT DRINK" or be installed with a purple (i.e., Pantone 522) identification tape or polyethylene vinyl wrap. The warning shall be stamped on opposite sides of the pipe and repeated every three feet or less.
 - ii. Identification tape shall be at least three inches wide and have white or black lettering on purple (i.e., Pantone 522) field stating "CAUTION: RECLAIMED WATER – DO NOT DRINK." Identification tape shall be installed on top of reclaimed water pipelines, fastened at least every 10 feet to each pipe length and run continuously the entire length of the pipe.
 - c. All reclaimed water valves and outlets shall be of a type, or secured in a manner, that permits operation by authorized personnel only.
 - d. Above-ground hose bibs (i.e., spigots or other hand-operated connections) shall not be present. Hose bibs shall be located in locked below-grade vaults that shall be clearly labeled as being of non-potable quality. As an alternative to the use of locked below-grade vaults with standard hose bibs services, hose bibs, which can only be operated by a special tool or connected to a special hose connection, may be placed in non-lockable underground services boxes clearly labeled as non-potable water.
12. Upon completion of site grading and shaping, an amended site evaluation will be conducted by a licensed soil scientist, and an amended site evaluation report shall be submitted to the Division of Water Quality. This report shall specifically address, but not be limited to, the effects of grading/construction upon the original site evaluation. The evaluation should include an investigation of key areas of grading, including soil features such as depth to seasonal high water table, depth to fractured bedrock, soil series, and similar soil features. The report should address the site suitability to ensure the protection of groundwater and the appropriateness of the permitted irrigation rate. Upon completion of site grading and shaping, the Division of Water Quality, Raleigh Regional Office, telephone number (919) 571-4700, and the Division of Water Quality, Groundwater Section, telephone number 919-715-3221, shall be notified. Such notification shall be made during the normal office hours from 8:00 a.m. until 5:00 p.m. on Monday through Friday, excluding State Holidays. No wastewater shall be introduced into the treatment system until written approval from the Division of Water Quality is received.

II. OPERATION AND MAINTENANCE REQUIREMENTS

1. The facilities shall be properly maintained and operated at all times.
2. Upon classification of the wastewater treatment and irrigation facilities 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. A suitable, year-round vegetative cover shall be maintained on the irrigation areas.

4. Irrigation shall not be performed during inclement weather or when the ground is in a condition that will cause runoff.
5. Adequate measures shall be taken to prevent wastewater runoff from the irrigation field.
6. 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.
7. The application rates for each irrigation zone shall not exceed the cumulative loadings listed in the table below over any twelve (12) month period at an instantaneous application rate not to exceed 0.1 inch/dose.

Zone	Acreage	Application Rate (in/yr)
1A	5.7	5.2
1B	7	25.6
2A	2.2	5.2
2B	7.7	14.8
2C	2.4	14.8
2D	3.3	25.6
2E	4.4	25.6
3A	10	14.8
3B	6.9	25.6
4A	3.6	14.8
4B	8.3	25.6
5A	1.7	5.2
5B	2.1	5.2
5C	2.2	5.2
5D	2.5	14.8
5E	7.5	14.8
6A	3.6	5.2
6B	4.5	14.8
6C	1.3	14.8
6D	5	25.6
7A	1.2	5.2
7B	2.2	14.8
7C	2.3	14.8
7D	3.2	25.6
8A	3	5.2
8B	3.1	14.8
8C	6.2	14.8
8D	3.9	25.6
9A	5.3	14.8
9B	1.9	25.6
9C	1.8	25.6
10A	1.5	5.2
10B	0.8	14.8
10C	1.5	14.8

8. 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.
9. No type of wastewater other than that from Homestead Development shall be irrigated onto the irrigation area.
10. Freeboard in the storage and upset pond shall not be less than two feet at any time.
11. A waste-level gauge, to monitor waste levels in the storage pond and upset pond, shall be installed prior to operation of this facility. This gauge shall have readily visible permanent markings indicating the maximum liquid level at the top of the temporary liquid storage volume, minimum liquid level at the bottom of the temporary liquid storage volume, and top of the dam elevations. Caution must be taken not to damage the integrity of the liner when installing the gauge.
12. A protective vegetative cover shall be established and maintained on all earthen basin embankments (outside toe of embankment to maximum pumping elevation), berms, pipe runs, erosion control areas, and surface water diversions. Trees, shrubs, and other woody vegetation shall not be allowed to grow on the earthen basin dikes or embankments. Earthen basin embankment areas shall be kept mowed or otherwise controlled and accessible.
13. All wastewater shall be routed to the five-day holding pond 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 pond shall be pumped back to the treatment plant for re-treatment or treated in the five-day pond prior to discharge to the storage pond.
14. The chlorine tablets used in the disinfection facility shall be of the kind and type specified in the Division approved plans and specifications.

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. Influent flow may be represented by effluent flow from the wastewater treatment system prior to storage.

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	120,000 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 at a point prior to irrigation for the following parameters:

Parameter	Sampling Point	Sampling Frequency	Type of Sample
Flow	Influent or 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
Residual Chlorine	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. The Permittee shall maintain adequate records tracking the amount of wastewater disposed. These records shall include, but are not necessarily limited to the following information:
 - a. Date and time of irrigation,
 - b. Volume of wastewater irrigated,
 - c. Zone irrigated,
 - d. Length of time zone is irrigated,
 - e. Continuous weekly, monthly, and year-to-date hydraulic (inches/acre) loadings for each zone,
 - f. Weather conditions, and
 - g. Maintenance of cover crops.
5. Freeboard in the storage ponds shall be recorded weekly.
6. 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 and disposal records [as specified in Conditions III(4) and III(5)] 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

7. 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.
8. 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.

9. Noncompliance Notification:

The Permittee shall report by telephone to the Raleigh Regional Office, telephone number (919) 571-4700, 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. Waste shall not be applied or discharged onto or below the land surface when the vertical separation between the waste and the seasonal high water table is less than one (1) foot.
2. Groundwater quality monitoring, as deemed necessary by the Division, shall be provided.
3. The five day upset pond shall have either a liner of natural material at least one (1) foot in thickness and having a hydraulic conductivity of no greater than 1×10^{-6} centimeters per second when compacted, or a synthetic liner of sufficient thickness to exhibit structural integrity and an effective hydraulic conductivity no greater than that of the natural material liner, according to 15A NCAC 2H .0219(f).
4. The Compliance Boundary and Review Boundary for the waste disposal area(s) is specified by regulations in 15A NCAC 2H, Waste Not Discharged to Surface Waters, specifically, .0219(k)(1)(C)(i)(III). The Compliance Boundary and Review Boundary for groundwater shall be established at the property boundary. An exceedance of Groundwater Quality Standards at or beyond the Compliance Boundary is subject to remediation action according to 15A NCAC 2L .0106(d)(2).

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 and disposal 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 to the disposal site or 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 22nd Day of March, 2005

NORTH CAROLINA ENVIRONMENTAL MANAGEMENT COMMISSION



Alan W. Klimek, P.E., Director

Division of Water Quality

By Authority of the Environmental Management Commission

Permit Number WQ0024844

Permit No. WQ0024844
March 22, 2005

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,

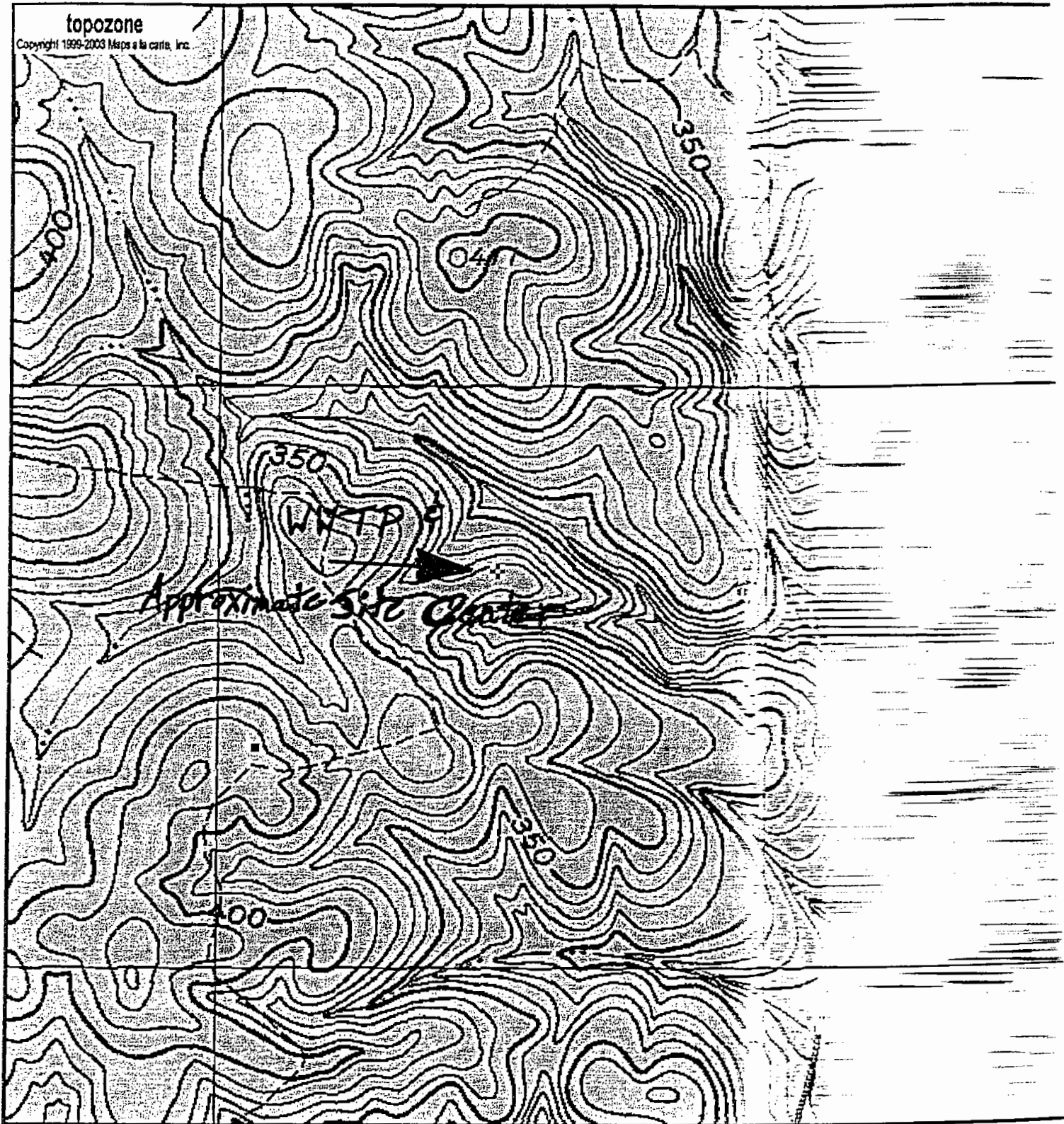
Project Name

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 _____



0 0.1 0.2 0.3 0.4 0.5 km

0 0.09 0.18 0.27 0.36 0.45 mi

Map center is 35° 45' 56"N, 79° 03' 32"W (WGS84/NAD83)

Farrington quadrangle D22 SE

Projection is UTM Zone 17 NAD83 Datum

Homestead Development

WQ 00 24844

**WATER POLLUTION CONTROL SYSTEM OPERATORS
CERTIFICATION COMMISSION**

**CLASSIFICATION
RATING SHEET FOR WATER POLLUTION CONTROL SYSTEMS**

FACILITY INFORMATION:

NAME OF FACILITY: Heater Utilities, Inc. – Homestead Development

MAILING ADDRESS: 202 MacKenna Ct., Cary, NC 27511

COUNTY: Chatham

CONTACT PERSON: Jerry Tweed

TELEPHONE: 910/467-8712, ext. 37

PERMIT NO.: WQ0024884

Check One: NC

WQ ☒

HEALTH DP

ORC:

TELEPHONE:

RATING INFORMATION: (Before completing this section, please refer to pages 2-4)

PERMITTED FLOW: 165,000 GPD

BNR?

YES

NO

CHECK CLASSIFICATION: WASTEWATER:

1

2 ☒

3

4

COLLECTION:

1

2

3

4

SPRAY IRRIGATION ☒

SUBSURFACE

LAND APPLICATION

PHYSICAL/CHEMICAL

GRADE I

GRADE II

RATED BY: Randy Jones

REGION: RRO

DATE: 3/7/05

REGIONAL OFFICE TELEPHONE NUMBER: 919/571-4700

EXT: 255

Classification of Biological Water Pollution Control Treatment Systems:

Grade I Biological WPCS

- Septic tank/sand filter systems
- Biological lagoon systems
- Constructed wetlands and associated appurtenances

✓

Grade II Biological WPCS

- Systems that utilize an activated sludge or fixed growth process with a permitted flow less than or equal to 0.5 million gallons per day (mgd)

Grade III Biological WPCS

- Systems that utilize an activated sludge or fixed growth process with a permitted flow of greater than 0.5 through 2.5 million gallons per day (mgd)
- Grade II systems that are required to achieve biological nutrient reduction *

Grade IV Biological WPCS

- Systems that utilize an activated sludge or fixed growth process with a permitted flow of greater than 2.5 million gallons per day (mgd)
- Grade III systems that are required to achieve biological nutrient reduction *

* *Biological Nutrient Reduction -*

The reduction of total nitrogen or total phosphorus by an activated sludge or fixed growth process as required by the facilities permit.

Classification of Collection Water Pollution Control Systems:

(whichever provides lowest grade)

Same grade as biological water pollution control system. Grade of system:

Based on population served:

1,500 or Less = Grade I

1,501 to 15,000 = Grade II

15,001 to 50,000 = Grade III

50,001 or more = Grade IV

Classification of Spray Irrigation Water Pollution Control Systems:

- ✓ Systems which utilize spray irrigation for the reuse or disposal of wastewater. These systems include: septic tanks, sand filter, oil/water separators, lagoons, storage basins, screening, sedimentation. Systems other than those listed above shall be subject to additional classification.
-

Classification of Land Application of Residuals Systems:

- ___ Systems permitted and dedicated for the land application of residuals that are produced by a water pollution control system or contaminated soils.
-

Classification of Physical/Chemical Water Pollution Control Treatment Systems:

- ___ Grade I Physical/Chemical: Any water pollution control system that utilizes a primarily physical process to treat wastewater. This classification includes groundwater remediation systems **

- ___ Grade II Physical/Chemical: Any water pollution control system that utilizes a primarily chemical process to treat wastewater. This classification includes reverse osmosis, electrodialysis, and ultrafiltration systems. **

*** Any water pollution control system that utilizes a physical/chemical process to enhance an activated sludge or fixed growth process, shall not be subject to additional classification*

.....

Classification of Subsurface Water Pollution Control Systems:

- ___ Systems which utilize the soil for subsurface treatment and disposal of wastewater and/or are required to have a certified operator under 15A NCAC 18A.1961. ***

**** Any subsurface system that has as part of its treatment process a water pollution control system that may be classified under Rules .0302 through .0307 of this section shall be subject to additional classification.*