

**WASTEWATER COLLECTION, TREATMENT
AND SUBSURFACE DISPOSAL
SYSTEM OPERATION PERMIT**

In accordance with the provisions of Article 11 of Chapter 130A, General Statutes of North Carolina, 15A NCAC 18A .1900 et seq., and other applicable Laws and Rules as amended,

PERMISSION IS HEREBY GRANTED TO

**Joyce DeMichele
OP # V-10-08-243**

For the

Continued operation of a **480 GPD** wastewater collection, treatment and disposal system consisting of:

- *1 @1000 Gallon Septic tank (Page STB)*
- *1 @ 1000 Gallon Pump tank (Page PT)*
- *1000 Gallon Recirculating Tank (Page Recirculating Tank)*
- *AdvanTex Treatment Systems consisting of 1 AX20 Pod.*
- *100% repair area*
- *Vericomm-AXBI-USVA pump control panel with alarm*
- *Low Pressure Pipe System with 5 @ 30' lines*
- *One Myers ME 50 Submersible sewage pump*
- *As built plans and specifications and technical manual submitted and prepared by Stroud Engineering are on file at the Carteret County Health Department*

To serve 359 Bay Run, Newport, (**PIDN 6326.04.76.8480**) **Improvement Permit # A11678**

with no discharge of wastes to the ground surface or surface waters pursuant to 15A NCAC 18A section .1900 et seq. -Laws and Rules for Sanitary Sewage Collection, Treatment, and Disposal [Hereinafter "Laws and Rules "] 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 the Carteret County Health Department (LHD) are considered part of this permit.

Facilities to be served: Four (4) bedroom single family home with no more than 8 people.

The system is classified as a **TYPE 5** system in accordance with 15 NCAC 18A .1961

The Owner shall be subject to the following conditions and limitations:

I. GENERAL CONDITIONS

1. This permit shall be effective only with respect to the nature and volume of the waste specified and for the type and size facility specified.
2. The Owner shall be subject to all applicable provisions of Article 11 of Chapter 130A of the General Statutes and 15A NCAC 18A section .1900 et seq. - Laws and Rules for Sanitary Sewage Collection, Treatment, and Disposal.
3. No addition, expansion, alteration, or repair (other than maintenance) shall be made to the system without first obtaining an Authorization to Construct from the Carteret County Health Department in accordance with NCGS 130A-336. Replacement of components shall be noted on inspection reports.
4. This permit may be suspended or revoked if the system is found to be out of compliance with the permit conditions.
5. Failure to abide by the conditions and limitations contained in this permit may subject the Owner to enforcement action in accordance with NCGS 130A-18, 130A-22C, 130A-23, and/or 130A-25.
6. The issuance of this permit does not exempt the Owner from complying with any and all statutes, rules, regulations, or ordinances which may be imposed by other government agencies or commissions which have jurisdiction.
7. A repair area as designated herein, with setbacks, shall be maintained in an undisturbed state.
8. The Carteret County Health Department may amend, revise, suspend or revoke this permit including revising frequencies in the Schedule of Operation and Maintenance based on monitoring data, water usage, system performance, or facility use.
9. It shall be the responsibility of the Owner or the Owner's Agent to notify any subsequent owners of the requirements contained within this permit, including the requirement to contract with a management entity.

II. PERFORMANCE STANDARDS

1. This system shall meet the Treatment Standard II (TS-II) standards. TS-II are designed, installed and operated to meet the following standards:
 - a. Carbonaceous Biochemical oxygen Demand, 5-day (CBOD₅) <10 mg/l.
 - b. Total suspended solids < 10 mg/l.
 - c. Ammonia-nitrogen < 10 mg/l
 - d. Either a 50% reduction of total nitrogen (Total Kjeldahl Nitrogen +NO_x-N) concentration in the wastewater or a total nitrogen concentration in the treated effluent < 15 mg/l (or as described in the innovative approval IWWS 2004-3).
 - e. Fecal coliform bacteria densities < 1,000 colonies/100ml.

Standards are arithmetic means, except fecal coliform is a geometric mean.

2. In the event of failure of the system to perform satisfactorily, as determined by the LHD, the owner shall take immediate corrective actions. Including actions as may be required by the LHD, such as the construction of additional or replacement wastewater treatment or disposal components, upon receipt of an Authorization to Construct.
3. The septage generated from this system shall be transported and disposed of in accordance with Article 9 of Chapter 130A 15A NCAC 13B et seq. and in a manner approved by the North Carolina Division of Solid Waste Management. The Owner shall specify the approved hauler and disposal sites and submits this information in writing to this office within 30 days. The LHD shall be notified of any changes in this information.
5. Adequate measures shall be taken to divert and maintain storm water from the system and nitrification field areas.
6. Untreated or partially treated wastewater shall not be discharged or bypassed from the facility or system.
7. The issuance of this permit shall not relieve the Owner of the responsibility for damages to surface or groundwaters resulting from the operation of this facility.

III. GENERAL OPERATION AND MAINTENANCE REQUIREMENTS

1. The system shall be properly maintained and operated at all times in accordance with the Laws and Rules, and with the Schedule of Operation and Maintenance of this permit.
2. The application rates to the nitrification field shall not exceed the Long Term Acceptance Rate.
3. No traffic, vehicles, or excavation shall be allowed on the system nitrification field or repair area.

IV. *AdvanTex Treatment System* OPERATION, MAINTENANCE AND TESTING (from IWWS state approval. The Innovative Wastewater System Approval is attached to this permit and is considered a part of this permit.)

1. For additional information see Operation & Maintenance Manual AdvanTex Treatment Systems, Rev. 2.0 1/02
2. All Orenco AdvanTex Treatment Systems require operation and maintenance. An operation and maintenance agreement with an NC certified subsurface operator must be in place. This operator must also be authorized by Orenco Systems, Inc. to operate the AdvanTex Treatment System.

3. System classification, management and inspection shall be in accordance with Rule. 1961. AdvanTex Treatment Systems shall be classified at a minimum as a Type Va system according to Table V(a) of Rule. 1961(b).
4. System Inspections: Both the local health department and the Operator-in-Responsible Charge (ORC) must conduct monitoring inspections of AdvanTex Treatment Systems at a minimum frequency as specified in Table V of Rule .1961 (b) and the Operation Permit, and as specified in the Innovative Wastewater System Approval.
5. At each AdvanTex Treatment Systems inspection the ORC shall, at a minimum, observe, monitor, and record:
 - a. wastewater level in the tanks,
 - b. the recirculation tank Biotube® (effluent filter) Pump Vault for clogging,
 - c. watertightness of tanks, risers and pipe connections at tanks,
 - d. operation of pumps, floats, valves, electrical controls and alarms,
 - e. pumping frequency from pump impulse counters and elapsed run time meters,
 - f. The AdvanTex Treatment System for any structural damage, accessibility, adequate ventilation, excess odors, insect infestations, vegetative growth over the drainfield, the drainfield area for surfacing effluent, and a sample of AdvanTex Treatment System effluent collected from the sampling point to check for effluent clarity and odor.
 - g. The pump cycle and run timer meters and any water meter readings.
6. At least twice per year the ORC shall, at a minimum, measure and report to the health department:
 - a. sludge and scum levels in the septic tank,
 - b. sludge level and grease presence in the pump tank,
 - c. drainfield pump delivery rate (drawdown test), and
 - d. drainfield dosing volume and measure or calculate average pump run time.
7. The ORC shall also conduct other additional observations, measurements, monitoring, and maintenance activities as specified in the Operation Permit and as recommended by the manufacturer.
8. Effluent Sampling and Test Protocol:

AdvanTex Treatment System effluent samples shall be collected by the ORC. These samples shall be taken as specified in the Innovative Wastewater System Approval.

 - a. Samples shall be taken from the pump tank sample tap. The sample shall not commence until at least 30 seconds of continuous discharge through the sample tap has been completed
 - b. All systems shall be tested for effluent CBOD₅, TSS, NH₃-N, TKN, NO_x-N, and fecal coliform bacteria yearly.
 - c. Reporting shall be done yearly for all data.

d. All samples shall be obtained, preserved, and analyzed in accordance with 40 CFR 136. A state certified wastewater laboratory shall analyze samples for the treatment performance standards specified in Section B.

e. When samples do not meet treatment standards specified in Section B, the system shall be resampled two more times within the next 60 days with samples collected no less than 48 hours apart. The average system performance shall then be calculated as the arithmetic mean (geometric mean for fecal coliforms) of results from the three samples. System maintenance or repair shall be required whenever the average system performance as calculated above does not meet the applicable treatment standards specified in Section B.

f. All samples must be taken using the USEPA's Good Laboratory Practices standards (40CFR 160). All samples must be analyzed using a state certified water quality laboratory, and complete chain of custodies must be maintained.

g. All samples must be preserved, transported and tested while strictly adhering to USEPA approved "Standard Methods for the Examination of Water and Wastewater", APHA, 19th ed. In addition, regardless of transport time, all CBOD samples must be submerged in water with a temperature 4°C immediately, and all nitrogen samples must immediately be preserved with enough sulfuric acid (H₂SO₄) to reduce the pH to 4 standard units or less. Special care to prevent contamination for samples collected for fecal analysis shall be practiced.

9. Notification and Performance of Maintenance and Repairs

a. The ORC shall alert the system owner in a timely fashion of needed maintenance or repair activities including, but not limited to, landscaping, tank sealing, tank pumping, pipe or control system repairs, media replacement, and adjustments to any other system component. The ORC shall notify the system owner, the AdvanTex® Dealer, and the local health department whenever the pump delivery rate efficiency or average pump run time are not within 25% of initial measurements conducted prior to system startup.

b. The ORC shall keep the Biotube® (effluent filter) Pump Vault cleaned and in proper operating condition, as per manufacturer's recommendations. All cleaning and maintenance shall be reported.

c. System troubleshooting and needed maintenance must be provided to maintain the pump delivery rate and average pump run time within 25% of initial measurements conducted prior to system startup.

d. The septic tank will be pumped as needed upon recommendation of the ORC. Please refer to page 13 of the AdvanTex Treatment System Operation & Maintenance Manual for preferred pumping intervals. However, at a minimum, the septic tank will be pumped whenever the solids level exceeds 25% of the tank's total liquid working capacity or the scum layer is more than 4 inches thick.

e. The ORC shall notify the local Health Department and system owner in writing whenever repairs are required. All maintenance activities shall also be logged and recorded in the ORC reports provided to the local health department.

10. Reporting

a. After each required ORC system inspection, the ORC shall provide a completed written report to the system owner and the local health department shall receive reports annually. At a minimum this report must specify:

(1) the date and time of inspection,

- (2) system operating conditions observed according to H.5, above,
- (3) system operating conditions measured according to H.6 and H.7 above,
- (4) results from any laboratory analysis of any effluent samples,
- (5) maintenance activities performed since the last inspection report,
- (6) an assessment of overall system performance, and
- (7) a determination of whether the system is malfunctioning, and the specific nature of the malfunction.

b. Reporting. The operator shall report to the Carteret County Department of Public Health, Division of Environmental Health annually as described in the innovative approval.

V. ROUTINE MAINTENANCE SCHEDULE (from as built plans and specifications)

MAINTENANCE:

SEPTIC TANK:

Inspect and clean Effluent filters	Twice yearly or when final septic tank is pumped
Skim tanks	By operator or engineer's recommendation
Inspect sludge levels	yearly
Pump Septage	by Operator or Engineer's recommendation or when solids level is greater than one quarter to one third tank liquid depths

PUMP TANK:

Inspect sludge levels	Yearly
Skim tank	By operator's recommendation
Pump septage	by Operator or Engineer's recommendation or when solids level is greater than one quarter to one third tank liquid depths

DRAINFIELDS:

Visual inspection	Twice yearly
Flush laterals and set pressure head	Yearly
Pressure jet and vacuum laterals	By operator's recommendation

TESTING/REPORTING:

Pump down test on wastewater system	Yearly
Event counters and timers recorded and tested	Twice yearly

Single AdvanTex AX20 TREATMENT SYSTEM:

Visual inspection	Two times a year
The operator shall complete all Orenco and regularly required maintenance.	

The AdvanTex System is classified as a Type Va and requires a private certified operator. The operator shall be a certified subsurface operator and shall be authorized by Orenco Systems, Inc. and the equipment dealer.

These are the minimum requirements. The designated operator must regularly inspect the system components and report or repair as necessary. This engineered wastewater system is classified as a Type V system and will require management by a private certified operator.

TANKS AND DRAINFIELD TO BE PROTECTED FROM VEHICULAR TRAFFIC BY 6 X 6 POST FENCE.

NO SPLICES OR JUNCTION BOXES MAY BE PLACED IN ANY TANK OR RISER.

SET CONTROL PANEL HEIGHT AT LEAST 12 IN. ABOVE GRADE BUT NOT LOWER THAN 9.0 FT M.S.L.

RUN UV ELECTRICAL LINE IN UL LISTED 600 VOLT ELECTRICAL CONDUIT

VI. MONITORING AND REPORTING REQUIREMENTS

1. Any monitoring necessary to protect public health and the environment will be established and an acceptable sampling reporting schedule shall be followed in accordance with Table V (b) of Rule .1961(b) of Laws and Rules and this permit.

2. One copy of all monitoring data and maintenance records signed by the Owner and Operator shall be submitted on or before the last day of the month following each twelve month period after permit issuance to the following address:

CARTERET COUNTY HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION
3820 Bridges St
Morehead City, NC 28557

Monitoring and inspection data shall be submitted on forms approved by the Carteret County Health Department.

3. The ORC shall be responsible for keeping a record of inspections including at least the following: dates, duration's, and times of site visits, observations made, procedures carried out, any maintenance, repairs, or corrective actions taken, meter readings, measurements, and drawdown rates. This record shall be maintained by the ORC during the term of this permit and shall be made available to the LHD upon request.

4. A record shall be maintained of all septage removed from the facility. The record shall include the name of the hauler, permit authorizing the disposal or a letter from the treatment facility agreeing to accept the septage, date the septage was hauled, and volume of the septage removed.

5. The Owner/Operator shall report by telephone to the Carteret County Health Department [telephone # 728-8499] as soon as possible, but in no case more than 48 hours upon finding the

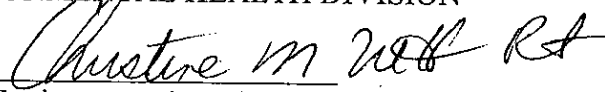
system is malfunctioning by surfacing or back-up of effluent, discharging directly into groundwater or surface waters, or when repairs are needed in accordance with NCGS 130A-334(9)(a) and Rule .1961(c) of Laws and Rules.

VII SUPPORTING DOCUMENTS

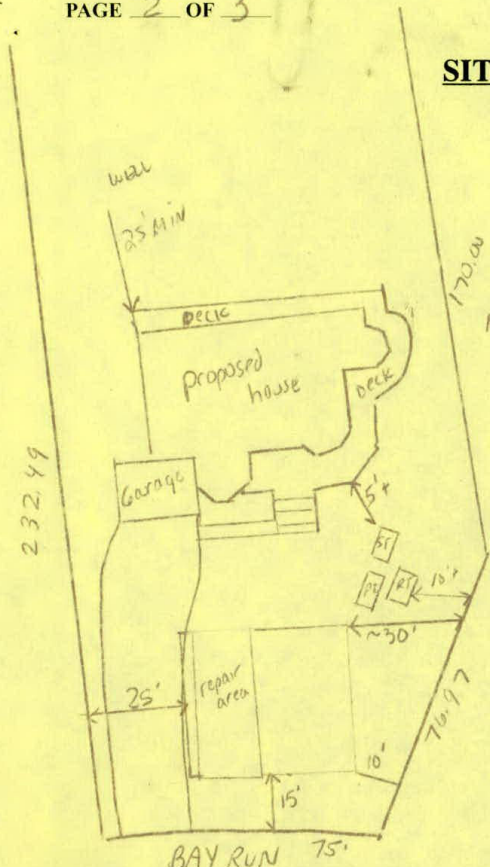
The following documents are considered part of this permit:

1. The application for Improvement Permit and the improvement permit issued 05-18-06
2. The Construction authorization issued 07/18/06
3. Article 11 of Chapter 130A of the General Statutes of N.C. entitled "Wastewater Systems"
4. Rules for Sewage Treatment and Disposal Systems 15ANCAC 18A .1900.
5. Plans and Specifications dated approved June 16, 2006
6. The as-built plans and specifications and technical manual submitted and prepared by Stroud Engineering.
7. The Innovative Wastewater Approval.
8. Permit issued this the 1st day of October, 2008 and expires October 01, 2013

CARTERET COUNTY HEALTH DEPARTMENT
ENVIRONMENTAL HEALTH DIVISION


Environmental Health Specialist
Carteret County Health Dept.

SITE PLAN



Advantex pretreatment
 w/ LPP disposal
 INWS-2004-3
 + pre-construction (interference
 COM. ENVIRON. (DESIGN) installer, Aqua.

+ INSTALL ACCORDING TO PUMPS
 APPROVED DATED 6-14-06 BY STRANO dated 6-16-06
 + Technical Manual, O & M provides the
 required installation procedure, system
 start-up, operation + maintenance, etc.
 manufacturer's rep. shall be present during
 installation + start-up.
 + The Oranco System Inc authorized
 installer must certify in writing that the
 system was installed in accordance with
 the approved design, prior to the operation
 permit issuance.

ELECTRICAL PERMIT REQUIRED: YES (X) NO ()

OWNER: JOYCE DeMichele
 ADDRESS: 90 JOHN DeMichele
209 ORAN DR PHONE 412 6996
 TAX PARCEL: 632404768486
 PROPERTY LOCATION: _____

***SYSTEM SHALL NOT BE INSTALLED
 UNDER WET CONDITIONS**

*Trench bottom depth to be no deeper than 12" below
 the _____ naturally occurring surface.

SUBDIVISION: BLUEWATER BANKS
 LOT: 55 BLOCK: _____ SEC: _____
 TYPE STRUCTURE: HOUSE
 NO. BEDROOMS: 4 NO. BATHS: 4
 NO. PEOPLE: 8 MAX DESIGN FLOW: 480 gpd
 GARBAGE GRINDER: YES () NO (X)
 SEPTIC TANK: 1000 GAL. PUMP TANK: 1000 GAL. 1000gal recirc. TANK
 NO. LINES: _____ WIDTH: _____
 TOTAL LENGTH: _____ FT. TOTAL _____ SQ. FT.
 WATER SOURCE: drain well
 HORIZONTAL DISTANCE FROM WELL: 50 + FT.
 SITE MODIFIED: YES (X) NO ()
 DRAINAGE REQUIREMENTS: _____

Easement Required: _____ Yes X No
 Drainage Maintenance Req. Surface () Subsurface ()
 Maintain Minimum 10' From Water Line
 Comments: _____

- STRUCTURE SHALL BE PLACED SO THAT GRAVITY FLOW IS ACHIEVED OR PUMP SYSTEM SHALL BE REQUIRED.
- DO NOT PARK, PAVE, DRIVE, OR BUILD OVER ANY PART OF SEPTIC SYSTEM OR REPAIR AREA.
- MAINTAIN A MINIMUM 5 FEET BETWEEN ANY FOUNDATION AND ANY PART OF SEPTIC SYSTEM OR REPAIR AREA.

- *Prior to any changes in system layout, approval must be obtained from Health Department.
- *NOTICE: Construction must comply with all state and local regulations. Do not install well until well site has been approved on inspection.
- *NOTICE: Beware much property in Carteret County is subject to Wetland Regulations and properties containing wetlands should receive approval from U.S. Army Corp. of Engineers prior to development.

FOR SYSTEMS REQUIRING LESS THAN 18" TRENCH
 BOTTOMS, A MINIMUM OF 6" SOIL COVER
 IS REQUIRED AND MAY REQUIRE ADDITIONAL
 FILL OF AT LEAST GROUP II SANDY
 LOAM TEXTURE.

(OFFICE USE FOR FIELD NOTES ONLY)
 MODIFICATION INSPECTION BY: CMP ENVIRONMENTAL HEALTH SPECIALIST

DATE: _____
 INSTALLER: 7-18-06
 COMMENTS: SUNING DIG OUT BACKHILL OK