

**AGENCY OF NATURAL RESOURCES
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
1 NATIONAL LIFE DRIVE, MAIN 2
MONTPELIER, VT 05620-3521**

**DRAFT
INDIRECT DISCHARGE PERMIT**

Permit No.: ID-9-0276
PIN: EJ96-0315.02

SECTION A "ADMINISTRATION"

In compliance with provisions of 10 V.S.A. §1263, and in accordance with the following conditions, the permittees:

Arbor Gardens Apartments / Fox Brook Homeowners Association
218 Overlake Drive
Colchester VT 05446

and

Peoples Trust Company of St. Albans
P.O. Box 320
St. Albans, VT 05478

are authorized to discharge treated domestic sewage from the Arbor Gardens Apartments in Colchester, Vermont to groundwater and indirectly into Allen Brook. **This is a permit renewal.**

A1. Permit Summary:

Expiration Date	March 31, 2022
Type of Waste	Domestic Sewage
Treatment System	Septic Tanks/Recirculating Textile Filters
Disposal System	Leachfields
Town	Colchester
Drainage Basin	Upper Lake Champlain
Receiving Stream	Allen Brook
Drainage Area	Approximately 3.0 square miles
Low Median Monthly Flow (LMMF)	Est. 1.16 c.f.s. (750,300 gallons per day)
Disposal Capacity	12,960 gallons per day
Dilution Ratio (Stream Flow to Effluent)	57.9 to 1 at LMMF

A2. Compliance Schedule:

The following schedule summarizes the actions and requirements necessary for compliance with the conditions of this permit. The permittees shall complete the requirements in accordance with the dates indicated. See the designated section for specific details.

<u>Condition # & Description</u>	<u>Schedule Date</u>
A3. Apply for renewal of indirect Discharge Permit	December 31, 2021
D2(A). Have a Vermont Registered Professional Engineer complete an inspection of the sewage collection, treatment and disposal system	Annually in April
D2(B). Submit Annual Inspection Report	Annually by July 1st
D2(C). Submit schedule for implementing engineer's recommendations	Annually by August 1st
D5. Pump septic tanks	As specified
D6. Employ Certified System Operator	As specified
E2. Collect and analyze septic tank and recirculating textile filter effluent samples	February, June and September
E3. Record effluent volume	Daily
E4. Collect and analyze groundwater monitoring well samples	February and September
E5. Measure and record the depths to groundwater in monitoring wells	Weekly, March 1 to April 30
E6. Measure and record the depth of ponding in observation wells	As specified
E7. Collect and analyze surface water samples	February and September

A2. Compliance Schedule (continued):

<u>Condition # & Description</u>	<u>Schedule Date</u>
E2, E4, E7. Submit results of monitoring following the date of sampling	By the 15th of the second month
E3, E5, E6. Submit readings and measurements	By the 15th of the month following the date of measurement or readings
E9. Submit Water Quality Evaluation	By December 31, 2021

A3. Expiration Date:

This permit, unless revoked, or amended shall be valid until March 31, 2022 despite any intervening change in Water Quality Standards or the classification of receiving waters. Renewal of this Indirect Discharge permit will be subject to all rules applicable at the time of renewal, including biological standards to determine significant alteration of aquatic biota.

The permittees should apply for an Indirect Discharge Permit renewal by December 31, 2021 for continued authorization to discharge treated domestic sewage. For the purposes of Title 3, an application for renewal of this indirect discharge permit will be considered timely if a complete application is received by the expiration date.

A4. Effective Date:

This permit becomes effective on the date of signature.

A5. Revocation:

The Secretary may revoke this permit in accordance with 10 V.S.A. §1267.

A6. Transfer of Permit:

This permit is not transferable without prior written approval of the Secretary. The permittees shall notify the Secretary immediately, in writing, before any sale, lease or other transfer of ownership of the property from which the discharge originates. The proposed transferee shall make application for a permit to be reissued in their name. Failure to apply shall be considered a violation of this permit. Responsibility for compliance with the conditions of this permit shall be the burden of the permittees until such time as transfer of the permit to the transferee is complete. All application and operating fees must be paid in full prior to transfer of this permit. This permit shall be transferred only upon showing by the permittees or proposed transferee of compliance with the following conditions:

A6. Transfer of Permit (continued):

- a. The transferee shall be a legal entity, financially and technically competent to operate, inspect, maintain and replace the systems.
- b. If the transferee is a corporation or an association of unit owners or other legal entity, it shall be demonstrated that such legal entity has legal authority to raise revenues for the proper operation, inspection and maintenance of the system.
- c. The transferee shall provide a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittees to the Secretary.

A7. Minor Modifications of Permit:

The Secretary may modify this permit without requiring a permit application, a public notice, or a public hearing to correct typographical errors, or to increase monitoring frequency, in accordance with Section F of this permit.

A8. Indirect Discharge Rules:

This indirect discharge was initially reviewed and qualified for an Indirect Discharge Permit in accordance with Section 14-403 "Systems with New Indirect Discharges to Class B Waters" of the Indirect Discharge Rules, effective February 29, 1996.

For this permit renewal, compliance with the Aquatic Permitting Criteria was demonstrated in accordance with Section 14-603(d) of the Indirect Discharge Rules, effective April 30, 2003.

A Wastewater System and Potable Water Supply Permit is required for all buildings to be connected to the system.

A9. Right of the Agency to Inspect:

The permittees shall allow the Secretary or the Secretary's authorized representative upon the presentation of their credentials and at reasonable times:

- a. To enter upon permittee's premises in which any effluent source, treatment or disposal system is located or in which any records are required to be kept under the conditions of this permit;
- b. To have access to and copy any records required to be kept under conditions of this permit;
- c. To inspect any monitoring equipment or method required in this permit;

A9. Right of the Agency to Inspect (continued):

- d. To sample any discharge of waste, groundwater or surface water; and
- e. To inspect any collection, treatment, pollution management and disposal facilities required by this permit.

A10. Permit Availability:

A copy of the approved plans and this permit shall remain at the office of the permittees and, upon request, shall be made available for inspection by the Secretary.

A11. Minor Modifications to System:

Minor modifications of the engineering design that do not reduce the treatment effectiveness or increase the capacity of the system may be approved in writing by the Secretary without a permit amendment.

Before making modifications to the treatment and/or disposal system, the permittees shall submit plans to the Secretary for review and approval. Plans for modification must be approved before any of the modifications or additions are made.

A12. Correction of Failed Systems:

The Secretary may, upon discretion, issue an Administrative Amendment to the Indirect Discharge Permit for the design and reconstruction of a failed wastewater disposal system where the replacement system design was not previously approved.

Before reconstruction of the failed system the permittee shall submit plans to the Department of Environmental Conservation for review and approval. These plans must be approved before any reconstruction occurs. Due to the urgency of the need to correct failed disposal systems, the Department will process these Amendments as soon as possible.

A13. Operating Fees:

This indirect discharge is subject to operating fees. The permittees shall submit the operating fees in accordance with procedures provided by the Secretary.

SECTION B "INDIRECT DISCHARGE"

B1. Location of Indirect Discharge:

The subsurface disposal systems serving Arbor Gardens Apartments are located in the Upper Lake Champlain drainage basin in the Town of Colchester, Vermont. The discharge is to groundwater and indirectly to Allen Brook.

The location of the subsurface disposal systems and indirect discharge can be found on the USGS Colchester, Vermont 7.5' quadrangle map at approximately Latitude 44° 35' 39" and Longitude W 73° 09' 51".

B2. Nature of Indirect Discharge:

The indirect discharge is 12,960 gallons per day from a sewage treatment system consisting of septic tankage, a recirculating textile filter treatment system, pump station, and two leachfield disposal areas. Septic tank effluent from the apartments flows by gravity to the recirculating pump station which discharges to twenty (20) AdvanTex™ textile filter units. Following treatment in the recirculating textile filter system the effluent is pumped to one of the two leachfields. Leachfield #1 utilizes an absorption trench design with three zones for the primary and alternate disposal systems (100% dual alternation) and a maximum application rate of 1.35 gpd/ft². It has a disposal capacity of 4,999 gpd. Leachfield #2 also utilizes an absorption trench design with four sub areas for the primary and alternate disposal systems (100% dual alternation) and a maximum application rate of 1.24 gpd/ft². It has a disposal capacity of 7,961 gpd. The effluent infiltrates through the soil to groundwater beneath the leachfield disposal area. Groundwater in this area flows to Allen Brook.

This indirect discharge is considered a new indirect discharge under the Indirect Discharge Rules. The treatment system described above was considered an experimental system under Section 14-C-110 of the Indirect Discharge Rules, effective February 29, 1996. The aspects of the design that are experimental include a maximum application rate of 40.5 gpd/ft² for the recirculating textile filters in Phase I and 37 gpd/ft² in Phase II, based on the footprint area of the AdvanTex™ textile filter units. Each AdvanTex™ textile filter unit contains 200 filter sheets that hang vertically within the filter box. Each sheet has an area of 4.58 ft².

As a condition of the approval of the experimental system, the AdvanTex™ treatment system must meet the effluent limitations listed in Condition D(4) of this permit.

SECTION C "SYSTEM CONSTRUCTION"

C1. Approved Plans:

The sewage collection, treatment, and disposal systems was reportedly completed in accordance with the following plans and specifications for the Arbor Gardens Apartments prepared and stamped by Richard Trudell, P.E. of Trudell Consulting Engineers, Inc., and which have been stamped "APPROVED" by the Secretary.

Sheet Number	Title	Date	Last Revised
SP2C	Master Site Plan	06/22/01	01/30/02
SP3C	Sanitary Plan – Field 1	06/22/01	01/30/02
SP4C	Sanitary Plan – Field 2	06/22/01	02/20/02
SP5C	Commercial Lots Site Plan	06/22/01	01/30/02
P1	Force Main Profile – Field 1	06/22/01	01/30/02
P2	Force Main Profile – Field 2	06/22/01	02/20/02
P3	Gravity Sewer Main – Profiles	11/13/01	01/30/02
D1	Sanitary Details	06/22/01	11/06/01
D2	Sanitary Details	06/22/01	11/06/01
D3	Miscellaneous Details	06/22/01	11/06/01
D5	Pump Station Details	06/22/01	01/30/02
D6	Sanitary Details	09/28/01	03/14/02
D7	Advantex Details	10/26/01	02/20/02
D8	Advantex Details	09/29/01	02/20/02
DF1	Disposal Field Sections	09/28/01	11/06/01

SECTION D "SYSTEM OPERATION"

D1. System Operation:

The wastewater disposal system shall be operated at all times in a manner that will (1) not permit the discharge of sewage onto the surface of the ground; (2) not result in the surfacing of sewage; (3) not result in the direct discharge of sewage into the waters of the State; (4) not result in a violation of Water Quality Standards; and (5) not result in a significant alternation of the aquatic biota in the receiving stream.

The disposal fields shall be alternated on an annual basis.

In accordance with accepted design practices, the effluent disposal rate to the disposal fields shall not exceed 12,960 gallons per day except as may occur on an occasional basis during normal operation.

D2. Annual Inspection, Report and Implementation Schedule:

(A) Annual Inspection

Annually during the month of April, the permittees shall retain a professional engineer registered in the State of Vermont to make a thorough inspection, evaluation, and report of the complete sewage collection, treatment and disposal system. The engineer's inspection shall include, but not be limited to the following:

1. inspecting the entire collection system, which includes removing each manhole cover to observe the condition of the sewers and manholes, and noting any signs of inflow or excess infiltration;
2. evaluating the accumulation of solids and scum in the septic tanks and determining if the septic tanks need to be pumped that year;
3. verifying the proper operation of all pumps, alarms, and controls in each pump station;
4. inspecting the surface of each cell of the recirculating textile filter;
5. verifying the proper operation of all distribution valves in the control building that distribute flow to the AdvanTex™ units;
6. performing a drawdown test on the leach field pump station pumps to verify meter calibration;
7. walking along the route of the force mains to check for any leakage evidenced by surfacing effluent;
8. inspecting the high and low point manholes;
9. verifying the proper operation of all distribution valves in the leachfield;
10. walking each disposal field, noting any signs of ponding effluent and the general condition of the surface of the disposal field;
11. verifying the use of alternate disposal fields and noting all valve settings;
12. checking all the observation wells and noting the depth of liquid level in each well;
13. checking all groundwater monitoring wells and noting the depth to ground water below the ground surface; and
14. noting any necessary repairs or maintenance that needs to be performed.

D2. Annual Inspection, Report and Implementation Schedule (continued):

(B) Annual Inspection Report:

By July 1st each year, the permittees shall have a professional engineer submit an annual report including the following items:

1. a complete list of the items inspected and the results of the inspection;
2. the measured depths of sludge and scum in each septic tank;
3. the tabulated depth of groundwater below ground surface for the period March 1st - April 30th;
4. a review of the performance of the treatment system relative to the requirements of Conditions D3 and D4; and
5. a discussion of the recommended repairs and maintenance required.

(C) Implementation Schedule:

By August 1st each year, the permittees shall notify the Secretary in writing stating how the engineer's recommendations are to be implemented, including a schedule for the recommended repairs and maintenance items which have not yet been completed.

D3. Experimental System - Criteria for Success/Failure:

This treatment and disposal system was originally considered an experimental system as per Section 14-C-110 of the Indirect Discharge Rules, effective February 29, 1996. The application rate > 3.0 gpd/ft² in the recirculating filter requires that the effluent quality meet the effluent limitations listed in Condition D(4) below. If the system fails to meet these effluent limitations, the Secretary may require additional monitoring. If the additional monitoring indicates that the treatment system is not meeting the effluent limitations listed in Condition D(4) below, the Secretary may require that the alternative treatment system proposed on the approved plans [26 RX Series AdvanTex™ units with textile coupons] be constructed or other modifications as approved by the Secretary.

The treatment system will be considered to have failed to meet its performance objectives when two consecutive samples of treated effluent exceed any of the effluent limitations listed in Condition D(4).

D4. Effluent Limitations:

The effluent discharged to the disposal area shall meet the following effluent quality limitations:

EFFLUENT PARAMETER	MAXIMUM DAILY LIMITATION
Biochemical Oxygen Demand (5-day)	15 mg/L
Total Suspended Solids	15 mg/L

D5. Septage Disposal:

During the system's annual inspection, the depth of sludge and scum shall be measured in all septic tanks. The septic tanks shall be pumped if: 1) the sludge is closer than twelve (12) inches to the outlet baffle or; 2) the scum layer is closer than three (3) inches to the septic tank outlet baffle or; 3) if otherwise recommended by the inspecting engineer. The permittees shall notify the Secretary in writing of the name and address of the pumper and the municipal sewage treatment facility or other facility approved by the Secretary where the septage was or is to be disposed.

D6. System Operator:

The permittees are required to employ a wastewater treatment facility Chief Operator with a Grade I certification at all times.

If the Secretary establishes an alternate certification for operators of treatment facilities such as approved in this permit, then the permittees will be required to employ an operator certified for that level within 18 months of operation of the system.

The permittees shall notify the Secretary, in writing, before the operation of the wastewater system, as to the name of the chief operator for the system. The permittees shall notify the Secretary in writing of any change in chief operators.

D7. System Operation and Maintenance:

The wastewater collection, treatment, and disposal system shall be operated and maintained at all times in a manner satisfactory to the Secretary and not to cause health hazards, contamination of drinking water supplies, groundwater and/or surface water.

D8. Forced Air Ventilation System:

During the month of October each year, the system operator shall verify the proper operation of the forced air ventilation system that serves the AdvanTex™ units. On the monthly report submitted in November each year the system operator shall note that the system has been checked and note any maintenance required.

D9. Inspection of Distribution Valves in Control Building and Leachfield:

On a monthly basis, the system operator shall observe the operation of the distribution valves in the control building and in the leachfields. The operator shall verify that the valves are distributing effluent sequentially to all components.

Results of the monthly observations shall be submitted to the Secretary by the 15th of the month following the date of observation.

D10. Reporting of Failures:

The permittees shall immediately report any failure of the wastewater collection, treatment, or disposal system to the Secretary, first by telephone within 24 hours of the failure and then in writing within 5 days of the failure. The written notice shall include a discussion of the actions taken or to be taken to correct the failure.

D11. Discharge Restrictions:

The permittees shall not allow any person to discharge or cause to be discharged anything other than sanitary wastewater to this collection, treatment and disposal system.

SECTION E "MONITORING"**E1. Quality Assurance/Quality Control Plan:**

The permittee shall perform compliance monitoring in accordance with an approved Quality Assurance/Quality Control Plan (QA/QC Plan) and the conditions of this indirect discharge permit.

E2. Septic Tank and Recirculating Textile Filter Effluent Monitoring:

The septic tank effluent and the recirculating textile filter effluent shall be sampled as per the QA/QC Plan and analyzed as follows:

<u>Parameter</u>	<u>Units</u>	<u>Sample Type</u>	<u>Sample Frequency</u>
pH	S.U.	grab	Feb., June and Sept.
Biochemical Oxygen Demand (5-day)	mg/L	grab	Feb., June and Sept.
Total Suspended Solids	mg/L	grab	Feb., June and Sept.
Chloride	mg/L	grab	Feb., June and Sept.
Total Phosphorus	mg/L	grab	Feb., June and Sept.
Total Kjeldahl Nitrogen (TKN)	mg/L	grab	Feb., June and Sept.
Ammonia Nitrogen	mg/L	grab	Feb., June and Sept.
Nitrate Nitrogen	mg/L	grab	Feb., June and Sept.

E2. Septic Tank and Recirculating Textile Filter Effluent Monitoring (continued):

The septic tank effluent samples shall be collected at the inlet end of the 9,000-gallon recirculation tank. The recirculating textile filter samples shall be taken at the sampling valve on the recirculation tank discharge line.

The results of the analyses shall be submitted to the Secretary by the 15th of the second month following the date of sampling.

If the system fails to meet the effluent limitations listed in Condition D(4), the permittees shall, for each occasion of exceedence, take and analyze samples for the exceeded parameter (BOD₅, TSS or both) for two consecutive months, in addition to normally required sampling, and submit those results to the Secretary. Repeated non-compliance with effluent limitations will require corrective action.

E3. Effluent Flow Volume Monitoring:

Each day at approximately the same time, the permittees shall record the volume of recirculated textile filter effluent discharged to the disposal fields based on readings from the pump station flow meters. The daily total, total for the month, and daily average for the month shall be submitted to the Secretary by the 15th of the month following the date of the readings.

E4. Groundwater Monitoring:

The groundwater in each of the groundwater monitoring wells around each leachfield shall be sampled as per the QA/QC Plan and analyzed as follows:

<u>Parameter</u>	<u>Units</u>	<u>Sample Type</u>	<u>Sample Frequency</u>
Escherichia coli (E-coli)	Colonies/100 ml	grab	Feb. & Sept.
pH	S.U.	grab	Feb. & Sept.
Chloride	mg/L	grab	Feb. & Sept.
Total Dissolved Phosphorus	mg/L	grab	Feb. & Sept.
Nitrate Nitrogen	mg/L	grab	Feb. & Sept.
Depth to groundwater (below ground surface)	inches	-	when sample

Because of the changing water table conditions, the samples from the groundwater monitoring wells might not be collected on the same day or in the same week. If a monitoring well has water at any time during the month, a sample is required to be collected and analyzed. Weekly checks are required during sampling months (February and September) until samples are collected from each well.

The results of these analyses and measurements shall be submitted to the Secretary by the 15th of the second month following the date of groundwater sampling.

E5. Groundwater Levels:

The depth to groundwater (below ground surface) in each monitoring well shall be measured and recorded weekly March 1st to April 30th each year.

The results of the measurements shall be submitted to the Secretary as part of the engineer's annual inspection report (see Condition D2).

E6. Observation Wells:

The depth of ponding in each of the observation wells shall be measured and recorded monthly when the average daily sewage flow for the system for two consecutive weeks exceeds 5,000 gallons per day.

The results of measurements shall be submitted to the Secretary by the 15th of the month following the date of measurement.

E7. Receiving Stream Monitoring:

The surface water at each of the surface water sampling stations shall be sampled as per the QA/QC Plan and analyzed as follows:

<u>Parameter</u>	<u>Units</u>	<u>Sample Type</u>	<u>Sample Frequency</u>
Escherichia coli (E-coli)	Colonies/100 ml	grab	Feb. & Sept.
pH	S.U.	grab	Feb. & Sept.
Chloride	mg/L	grab	Feb. & Sept.
Total Phosphorus ¹	mg/L	grab	Feb. & Sept.
Total Dissolved Phosphorus ¹	mg/L	grab	Feb. & Sept.
Nitrate Nitrogen	mg/L	grab	Feb. & Sept.

Note: #1. Two independent samples shall be taken and analyzed on each sampling date.

The permittee shall not sample the receiving stream within 24 hours of any storm event affecting the watershed of that stream.

The results of the surface water monitoring shall be submitted to the Secretary by the 15th day of the second month following the date of sampling.

E8. Biological Sampling:

Upon written notification from the Secretary, the permittees shall conduct biological sampling in Allen Brook upstream and downstream of the indirect discharge in accordance with biological sampling procedures approved by the Department.

Results of the biological sampling shall be submitted to the Secretary by the date specified in the notification.

E9. Summary Water Quality Evaluation:

By December 31, 2021, the permittees shall have a qualified water quality specialist submit to the Secretary an evaluation of all past groundwater and surface water quality data, and determine what, if any, short or long-term impacts there have been on ground or surface water quality. The results of the biological stream monitoring in Condition E(8), if required, shall be included.

E10. Sampling and Testing Procedures:

All wastewater, groundwater and surface water sampling, preservation, handling and test procedures used to comply with the monitoring requirements herein shall conform to procedures specified in the most current edition of Standard Methods for the Examination of Water and Wastewater APHA - AWWA - WPCF, and the Vermont Water Quality Standards unless written approval of an alternate method is received from the Agency.

The laboratory utilized for analyzing the samples shall demonstrate successful participation in third party proficiency testing recognized by ISO or NELAP for all parameters and shall analyze any check sample provided by the Secretary. Failure to obtain an acceptable result for either the Secretary's check sample or successful third party proficiency testing may be a basis for requiring an alternate analytical laboratory.

E11. Miscellaneous Monitoring:

If the permittees monitor any required parameter set forth in this permit for this treatment and disposal system more frequently or at additional locations outside the treatment facility than required by this permit, the results of such monitoring shall be included in the monthly report.

All records and information resulting from the monitoring activities required by this permit including all records of analyses performed and calibration and maintenance of instrumentation and recordings from continuous monitoring instrumentation shall be retained for a minimum of three (3) years, or longer if requested by the Secretary. Records shall include laboratory bench sheets as well as analytical procedures used, interim results obtained and all calculations supporting the reported test results.

SECTION F "COMPLIANCE REVIEW"

If the results of monitoring and analysis of the effluent, groundwater, or surface water indicates that a violation of the effluent disposal limits, or a violation of the Vermont Water Quality Standards, or a Significant Alteration of the Aquatic Biota has occurred, is occurring, or is likely to occur, the Secretary may increase the frequency of, or change the location and/or type of monitoring of the ground and surface water, and/or require the permittees to take appropriate corrective actions to eliminate or reduce the possibility of a violation.

The issuance of this permit, ID-9-0276 to Arbor Gardens Apartments/Fox Brook Homeowners Association and Peoples Trust Company of St. Albans by the Secretary relies upon the data, designs, judgment, and other information supplied by the applicant, their consultants and other experts who have participated in the preparation of the application. The Department makes no assurance that this system will meet the performance objectives of the applicant and no warranties or guarantees are given or implied.

SECTION G "EFFECTIVE DATE"

This Indirect Discharge Permit, ID-9-0276, to the Arbor Gardens Apartments/Fox Brook Homeowners Association and Peoples Trust Company of St. Albans for the discharge of treated domestic sewage from the Arbor Gardens Apartments located in Colchester, Vermont is effective this ____ day of _____, 2017.

Emily Boedecker, Commissioner
Department of Environmental Conservation

By: _____ **DRAFT** _____
Mary Clark, Program Manager
Indirect Discharge Program