Jacobsen, James

From: Jacobsen, James
Sent: Thursday, May 15, 2003 9:39 AM
To: Noble, William T
Subject: RE: Presby Maze

Hi Bill,

I don't think we'd call the Maze an outlet filter (Table 1900.10), as that is for the "tee" type filters like Zabel, et. al.). In other words, the word "outlet" is the key there.

According to information provided to us by Presby Environmental, Inc. the average BOD5 & TSS for the Maze was 107 mg/l. On that basis, the Presby Maze could accrue 5 points from Table 1900.11, based upon effluent quality rather than the device in and of itself.

Jim

-----Original Message-----
From: Noble, William T
Sent: Wednesday, May 14, 2003 1:38 PM
To: Jacobsen, James
Subject: Presby Maze

Hi Jim,

For first-time system variances, can points be earned for use of a "Presby Maze", under either the additional treatment or advanced treatment devices categories? And if so, what would the point value be?

Thanks.
Bill

P.E.I.

PRESBY ENVIRONMENTAL, INC.
Innovative Septic Technologies
Route 117 • Box 617
Sugar Hill, NH 03585
1-800-473-5298
www.PresbyEnvironmental.com

Mr. James A. Jacobsen, Manager
State of Maine Department of Human Services
Wastewater and Plumbing Control Program
Division of Health and Engineering
11 State House Station
Augusta, ME 04333-0011

June 15, 1998

Dear Jim,

In reference to our discussion this morning, I am requesting a revision and/or clarification to the existing approval dated March 25, 1998 for The Presby Maze™ in Maine.

I request that the Presby Maze™ be approved for use as described in the Presby Maze™ Design and Installation Handbook for the State of Maine with a revision date of February 1998. More specifically I request that the Presby Maze™ be allowed a reduction in leaching area as described in the handbook. A condition of this reduction is that enough space be reserved to increase the leach area to standard size should it be necessary. In cases where there is not enough space to accommodate a standard size leach area a variance will be required.

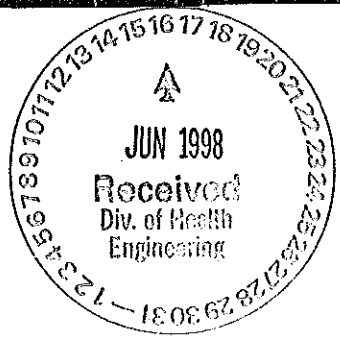
If you have any question please contact me. Thank you for your time and consideration in this matter.

Very truly yours,

David W. Presby,
President

PRESBY ENVIRONMENTAL, INC. PO Box 617, Route 117, Sugar Hill, NH 03585

FAX



Date: June 16, 1998

Number of pages including cover sheet: 2

To:

Jim Jacobsen

Phone: 207-287-5695

Fax phone: 207-287-4172

CC:

From:

DAVID W. PRESBY

Phone: (603) 823-5298

Fax phone: (603) 823-8114

REMARKS: ☐ Urgent ☒ For your review ☐ Reply ASAP ☐ Please comment

Route 117 • Box 61
Sugar Hill, NH 0358
1-800-473-5298
www.PresbyEnvironment .com

Mr. James A. Jacobsen, Manager
State of Maine Department of Human Service
Wastewater and Plumbing Control Program
Division of Health and Engineering
11 State House Station
Augusta, ME 04333-0011

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Very truly yours,

David W. Presby,
President

FILE COPY

STATE OF MAINE
DEPARTMENT OF HUMAN SERVICES
DIVISION OF HEALTH ENGINEERING
10 STATE HOUSE STATION
AUGUSTA, MAINE
04333-0010

ANGUS S. KING, JR.
GOVERNOR

KEVIN W. CONCANNON
COMMISSIONER

June 9, 1998

Presby Environmental, Inc.
Attn.: David Presby
Box 617
Sugar Hill, New Hampshire 03585-0617

Subject: Product Registration, ***Presby Maze***

Dear Mr. Presby:

This past weekend, I saw your company's television advertisement for the ***Presby Maze***. I believe the station may have been WPXT 51 from Portland, Maine. In any event, one of the statements made during the advertisement was that the ***Presby Maze*** has been granted approval to reduce the size of the disposal area for onsite sewage disposal systems utilizing this product. While the advertisement did not specifically mention Maine for this "reduction allowance", the implication nonetheless was clear and unambiguous.

While reductions might be allowed elsewhere, this is certainly not so in the State of Maine. Please refer to the Division's letter to you dated March 25, 1998, under provisions of which the Division authorized the ***Presby Maze*** for use in the State of Maine, provided that it is installed and maintained in conformance with the manufacturer's directions. That letter did not include ***any*** provisions for reduction of disposal area size based upon use of the product.

Therefore, I strongly suggest that your television advertisement, as well as any other advertising media you might be using, clarify that the State of Maine does not allow reductions in disposal area size based on use of the ***Presby Maze***. Alternately, you might consider specifying which states allow such a reduction and not include Maine in the list. I leave the method to your discretion.

If you wish to pursue such an allowance, you must first request the allowance, and submit data to support the proposal. The supporting data may be achieved by submitting a letter to the Division from a) a certifying organization, such as the International Association of Plumbing and Mechanical Officials (IAPMO), Building Officials and Code Administrators (BOCA), or other suitable organization stating their approval of the product, b) the American Society for Testing and Materials (ASTM) indicating the requested product (used as indicated in the request) meets the ASTM standard as specifically listed in the appropriate section of any nationally recognized plumbing code, such as BOCA, IAPMO (same as International Plumbing Code), c) National Sanitation Foundation (NSF), or equal.

If you have any questions please feel free to contact me at (207) 287-5695.

Sincerely,

James A. Jacobsen, Manager
Wastewater and Plumbing Control Program
Division of Health Engineering
e-mail: james.jacobsen@state.me.us

xc: File
W. Clough Toppan, Director, DHE
Mark Randlett, AAG

Is your RETURN ADDRESS completed on the reverse side?

SENDER:
- Complete items 1 and/or 2 for additional services.
- Complete items 3, 4a, and 4b.
- Print your name and address on the reverse of this form so that we can return this card to you.
- Attach this form to the front of the mailpiece, or on the back if space does not permit.
- Write "*Return Receipt Requested*" on the mailpiece below the article number.
- The Return Receipt will show to whom the article was delivered and the date delivered.

I also wish to receive the following services (for an extra fee):
1. ☐ Addressee's Address
2. ☐ Restricted Delivery

Consult postmaster for fee.

3. Article Addressed to:

PRESBY ENVIRONMENTAL, INC.
ATTN: DAVID PRESBY
BOX 617
SUGAR HILL, NEW HAMPSHIRE
03585-0617

4a. Article Number
P 286 684 400

4b. Service Type
- ☒ Registered
- ☐ Certified
- ☐ Express Mail
- ☐ Insured
- ☐ Return Receipt for Merchandise
- ☐ COD

7. Date of Delivery

5. Received By: (*Print Name*)

6. Signature: (*Addressee or Agent*)
X [signature]

8. Addressee's Address (Only if requested and fee is paid)

PS Form **3811**, December 1994

Domestic Return Receipt

Thank you for using Return Receipt Service.

File received 6/16/9[illegible]

STATE OF MAINE
DEPARTMENT OF HUMAN SERVICES
11 STATE HOUSE STATION
AUGUSTA, MAINE
04333-0011

ANGUS S. KING, JR.
GOVERNOR

KEVIN W. CONCANNON
COMMISSIONER

March 25, 1998

Presby Environmental, Inc.
Attn.: David Presby
Box 617
Sugar Hill, New Hampshire 03585-0617

Subject: Product Registration, ***Presby Maze***

Dear Mr. Presby:

Thank you for your visit to this office on February 18, 1998 regarding the ***Presby Maze***, the manufacturing literature and accompanying engineering data, and model you provided. It is our understanding that the ***Presby Maze*** is a serpentine series of plastic mesh panels, on a plastic frame, which is inserted into a conventional septic tank. You indicate that the panels allow suspended solids in the septic tank to flocculate and adhere to the panels, thereby reducing the amount of suspended solids in the effluent. You supplied supporting information gathered from a test installation in New Hampshire, where the ***Presby Maze*** was installed in a secondary septic tank.

Under provisions of Section 1802 of the Maine State Plumbing Code, Subsurface Wastewater Disposal Rules (copy enclosed), any manufacturer or distributor submitting a new product for code registration needs to demonstrate that:

1. The product is designed to protect public health, prevent the creation of any nuisance, and prevent environmental pollution to the same extent as comparable products presently authorized by Department for use in this code, and

2. The product is based on sound engineering principles and can be expected to provide the same level of protection to public health and the environment as offered by the authorized products presently authorized by the Department for use in this code.

Such demonstration may be achieved by submitting a letter to the Division of Health Engineering from: a) a certifying organization, such as the International Association of Plumbing and Mechanical Officials (IAPMO), Building Officials and Code Administrators (BOCA), or other suitable organization stating their approval of the product, or b) the American Society for Testing and Materials (ASTM) indicating the requested product (used as indicated in the request) meets the ASTM standard as specifically listed in the appropriate section of any nationally recognized plumbing code, such as BOCA, IAPMO (same as International Plumbing Code), or equal. In certain instances, testing and empirical data can be used instead.

According to the information you provided, the ***Presby Maze*** has received approval from the State of New Hampshire. Further, the Division issued preliminary approval for the ***Presby Maze*** in July of 1993. On that basis, and based upon the information you provided, the Division has determined that the ***Presby Maze*** is acceptable for use in the State of Maine, provided that it is installed and maintained in conformance with the manufacturer's directions.

Because installation and owner maintenance has a significant effect on the working order of onsite sewage disposal systems, including their components, the Division makes no representation or guarantee as to the efficiency and/or operation of the ***Presby Maze***. Further, registration of this product for use in the State of Maine does not represent Division preference or recommendation for this product over similar products.

If you have any questions please feel free to contact me at (207) 287-5695.

Sincerely,

James A. Jacobsen

James A. Jacobsen, Manager
Wastewater and Plumbing Control Program
Division of Health Engineering
e-mail: james.jacobsen@state.me.us

xc: File

CHAPTER 18

EXPERIMENTAL TECHNOLOGY AND PRODUCT APPROVAL REQUESTS

SECTION 1800.0 GENERAL

1800.1 Scope: This Chapter governs applications for new or experimental technology and requests for product approval.

1800.2 Intent: This Chapter provides a procedure to review the installation, operation, and long term requests for monitoring of experimental technologies and requests for new product approval.

SECTION 1801.0 REQUIREMENTS FOR NEW OR EXPERIMENTAL TECHNOLOGY

1801.1 General: Any permit issued to allow an experimental technology system shall require, as a condition of issuance, the establishment of a monitoring program by which system performance can be demonstrated. At a minimum, all experimental technology systems shall be capable of operating at the same degree of efficacy and reliability as any authorized alternative appropriate for the site. Any variance issued will require that the system be altered if such efficacy and reliability are not obtained, in order to bring performance up to standard, or, if such alteration is not feasible, that the system shall be abandoned.

1801.2 Applicants shall demonstrate: Requests for the installation experimental technology systems may be granted by Department if it is demonstrated that the conditions set forth in this Section can be met.

1801.3 Backup design: An authorized design can be installed on the property for which an experimental technology system is proposed. The backup system design shall be recorded with the county registry of deeds;

1801.4 Meets the intent of this code: The proposal is designed to protect public health, prevent the creation of any nuisance, and prevent environmental pollution to the same extent as the authorized system approved for the property;

1801.5 Sound engineering principles: The proposed design is shown to be based on sound engineering principles and can be expected to provide the same level of protection to public health and the environment as offered by the authorized system that could be installed on the property; and

1801.6 System performance: If the system does not perform so that it meets the purposes of this code, the applicant (or current owner) will expeditiously abandon the experimental system and install the backup system meeting all the requirements of this code.

SECTION 1802.0 REQUIREMENTS FOR PRODUCT APPROVAL

1802.1 General: Any manufacturer or distributor submitting new product (disposal system components, pre-filters or proprietary disposal devices) to the Department for code approval shall demonstrate that the conditions set forth in this Section are met.

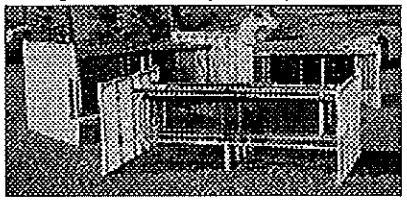
1802.2 Meets the intent of this code: The product is designed to protect public health, prevent the creation of any nuisance, and prevent environmental pollution to the same extent as comparable products presently authorized by Department for use in this code;

1802.3 Sound engineering principles: The product is based on sound engineering principles and can be expected to provide the same level of protection to public health and the environment as offered by the authorized products presently authorized by the Department for use in this code; and

1802.4 Application fee: An application fee for product approval, as indicated in Table 110.3, shall be submitted to the Department to defray the cost of the review.

The Presby Maze™ for Septic Tanks

The Presby Maze is a simple plastic device inserted inside a septic tank designed to trap suspended solids before they reach the leach area.



Suspended solids are those solids that are tiny enough or of a certain density, so as to remain suspended in septic tank effluent. Solids in effluent exit the tank where they can pollute the soil and groundwater or cause costly leach area failure. The Presby Maze uses a network of vertical mesh panels to provide a large surface area for naturally sticky suspended solids to collect on. Solids on the mesh attract other solids forming globules (a collection of solids). Globules gradually change size and density either becoming more dense, slithering down the mesh panels, sinking to the bottom of the tank or more buoyant, creeping up the mesh panels to the liquid surface.

In addition the Presby Maze provides for a substantial increase in liquid retention time inside the tank. Solid end walls have openings positioned to direct liquid back and forth inside the tank increasing the retention time and preventing liquid from flowing directly from inlet to outlet. Increasing liquid retention time provides more time for solids to naturally separate from the liquid and for the Presby Maze to collect the more resistant solids.

The Mesh panels of the Presby Maze provide a large bacterial surface covered with solids. Solids on the mesh are more effiecently broken down by anaerobic bacteria naturally present in the septic tank. Increased bacterial breakdown, increased retention time, and trapping suspended solids allows the Presby Maze to pretreat effluent in the septic tank before it reaches the leach area. Effluent pretreatment provides for smaller, less expensive, longer lasting, leach areas in addion to protecting soil and groundwater.

The Presby Maze never needs any special maintenance or cleaning. During normal septic tank pumping when liquid is removed from the tank, solids separate from the mesh due to the lack of buoyancy and are pumped out.

A number of recent tests have been conducted on Presby Mazes in secondary tanks of a 20,000 gallon per day commercial system, which includes a resturaunt and hotel. In these tests the Presby Maze tanks have trapped a minimum of 92% percent of the suspended solids. Some states are allowing reduction of commercial and/or residential leach area sizes when using the Presby Maze. The percentage of reduction varies depending on the state. Currently New Hampshire allows up to a 25% reduction in commercial leach area. This is the only commercial reduction ever allowed by the State.

Home | Company Description | Enviro Septic | Presby Maze

The **Presby Maze**™ for Septic Tanks

Patent No. 5,429,752

- ***Reduces Commercial Leachfield Size up to 25%***
- ***Smaller Leachfields Save Your Customers Money***
- ***Extends Leachfield Life***
- ***Protects The Environment***
- ***Virtually No Maintenace***

More Than Just A Filter

- ***Pretreats Effluent In The Septic Tank***
- ***Inexpensive***
- ***Easy to install***
- ***No Moving Parts***
- ***No Cleaning Required***
- ***No Parts Ever Removed From Tank***
- ***Requires Only Normal Septic Tank Pumping***

P.E.I.

PRESBY ENVIRONMENTAL, INC.
Innovative Septic Technologies
Enviro-Septic/Presby Maze
Manufacturer/Distributor
PO Box 617
Sugar Hill, NH 03585
(603) 823-5298

Why Should You Use The **Presby Maze**™ for Septic Tanks?

Problem: Today's lifestyles produce large quantities of waste water with higher percentages of suspended solids than ever before. A septic system's first defense against solids is the septic tank. Designed primarily as a settling chamber to contain heavy solids that sink and light solids that float, the septic tank offers little pretreatment of effluent and is no match for modern day suspended solids. Technology has provided us with improved cleaners, chemicals, and other household products that change wastewater to heavy water. Heavy water is extremely efficient at keeping solids suspended. Clothing of today is frequently made of polyfibers and materials that can not be broken down by a septic system. Suspended solids in the effluent escape the septic tank causing leachfield failure and pollution of the environment.

Solution: The Presby Maze

A LIGHTWEIGHT PLASTIC DEVICE EASILY INSERTED INSIDE A SEPTIC TANK.

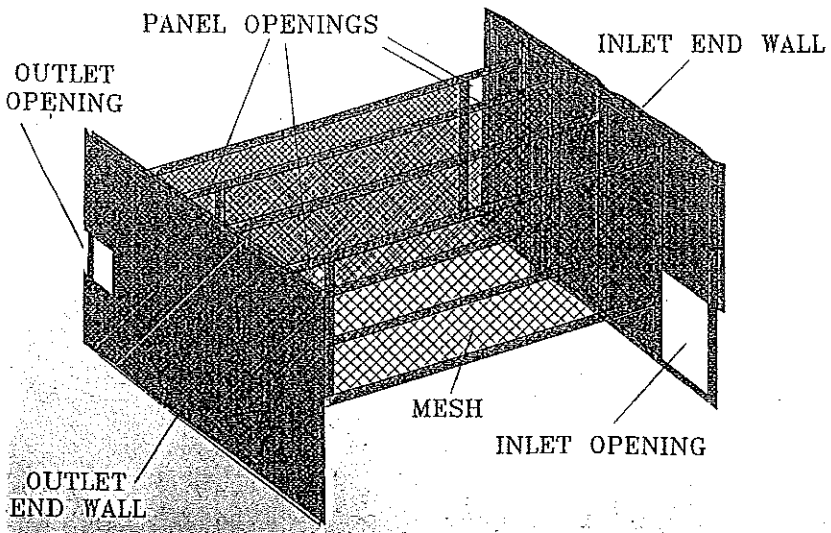
Breaks down the boundary layer - Inside a septic tank there is a thin layer of liquid adjacent to the smooth surface of the inside walls that forms a boundary layer preventing any solids from sticking to the wall. The mesh panels of the Presby Maze create low level turbulence as the liquid passes through and around them which break down the boundary layer, allowing suspended solids to stick on the mesh.

Traps suspended solids - The Presby Maze has vertical mesh panels that provide a huge surface area for naturally sticky suspended solids to collect. Solids migrate their way up or down the mesh panel depending on their weight. A mass of solids that is either light or heavy enough will separate from the mesh and float or sink respectively.

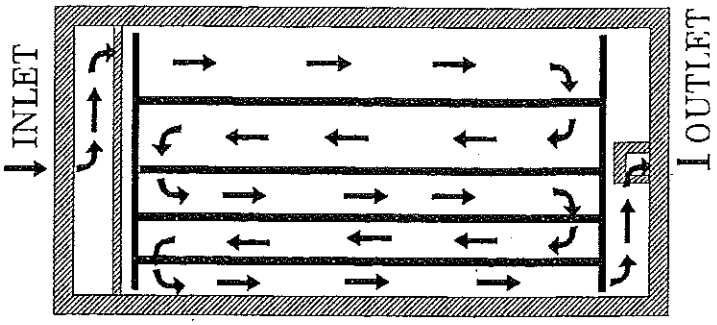
Increased retention time - Liquid inside a standard septic tank travels the shortest path directly from inlet to outlet providing little time for solids to separate. The solid end walls of the Presby Maze each have one opening on opposite corners that direct effluent through the maze of mesh panels. This increases the time and distance liquid must travel inside the tank to nearly five times that of a standard tank.

Pretreatment - The mesh panels provide a huge surface for bacterial growth to break down the trapped suspended solids. A combination of increased retention time, trapping suspended solids, and increased bacterial breakdown of solids allows the Presby Maze to pretreat effluent before it enters the leachfield. Pretreatment allows reduced leachfield size and protects the environment.

THE PRESBY MAZE



SEPTIC TANK with PRESBY MAZE



Advisory Opinion
From the
Technical Review Committee
For the
New England Interstate Regulatory Cooperation Project

Product/Technology Name:
Presby Maze

Applicants Name & Address:
David W. Presby
Presby Environmental, Inc.
P.O. Box 617
Sugar Hill, NH 03585
(603) 823-5298

NEI Category:
2 – System Modification

Date of Opinion:
February 18, 1998

Project Background:
The New England Interstate Water Pollution Control Commission (NEIWPCC) in cooperation with the New England Governors Conference (NEGC), EPA Center for Environmental Industry and Technology (CEIT), EPA's National Small Flows Clearinghouse (NSFC), and the New England state environmental/health agencies responsible for the administration of on-site wastewater treatment systems are undertaking a 12-month pilot project for the regional voluntary evaluation of innovative/alternative on-site wastewater products/technologies. The goal of the project is to facilitate the technical evaluation of innovative/alternative (I/A) on-site wastewater products/ technologies on a regional basis. This effort should help expedite the acceptance of innovative/alternative on-site wastewater treatment products/technologies. The work will be carried out by a Technical Review Committee (the Committee) which will conduct independent evaluations of product/technology performance. The Committee, made up of New England state regulators and advisors, will assess each product/technology on its merits, backed by quality data, and render an Advisory Opinion. The benefit of the Committee is to assist regulators in carrying out their responsibilities for evaluating these technologies in a more efficient manner.

The Committee has defined three categories of On-site I/A technologies:

1. **Material Replacement**
2. **System Modification**
3. **Advanced Wastewater Treatment**

Applicant's Description of Product/Technology:
The Presby Maze is a patented product that can be inserted inside most standard concrete septic tanks ranging in size from 1250 to 3000 gallons. It is made of PVC plastic pipe, high-density plastic mesh, and heavy sheet plastic. No modification to a standard system is required to use the Maze. The Presby Maze is more of an addition than a replacement. The Maze enables the septic tank to contain more suspended solids from escaping to the leach area. These solids, that neither sink nor float, can exit the septic tank and clog the receiving soil.

Technology Claim(s):
The above-mentioned applicant submitted the following Claims of product performance with the formal submittal. The applicant was seeking the Committee's validation of these claims as part of the product/technology's consideration for regional evaluation in the Advisory Opinion:

Claim 1: *The Presby Maze enables a standard septic tank to hold a greater percentage of suspended solids than the same tank without a Maze installed. When installed in a primary tank, the percentage of suspended solids is approximately 75% of the solids entering the tank. When installed in a secondary tank, the percentage of suspended solids retained is approximately 50%.*

Claim 2: The Presby Maze allows for the use of smaller leachfields because the effluent entering the leachfield has a smaller percentage of solids, and therefore has less tendency top clog the receiving layer of the leachfield.

Technical Review Committee's Response to Claims:
The Technical Review Committee's opinion is based on the Committee's evaluation of available information on the product/technology and relates to the specific products, materials, and specifications stated in the Technology Claim(s) of performance.

X The Committee has insufficient information to substantiate the applicant's above-stated performance Claim 1 for the product/technology. Although some of the data shows that the technology is capable of meeting Claim 1, additional data/testing is needed to document these results can be achieved on a consistent, long-term basis. The Committee reached this decision via a unanimous vote.

X The Committee can not issue an opinion on the applicant's above-stated performance Claim 2 for the product/technology. Claim 2 relates to state specific regulations which this Committee does not have the authority to determine.

The applicant should request a determination from the committee for any modifications to the product/technology. The product/technology is also evaluated for the quality of the data, wastewater science, and the technology's apparent merit as an innovative/alternative on-site wastewater treatment technology.

General Observations/Concerns:
After thoroughly evaluating all of the available information, the Technical Review Committee has identified the following concerns that may affect the approval of said technology in a state:

1. *The technology/product does not appear to have any adverse effects on the performance and may indeed provide further treatment in a septic tank due to the extended treatment path caused by the product.*
2. *The product/technology may require a higher degree of maintenance than a conventional septic tank due to the collection of suspended solids.*
3. *Although the applicant has provided some preliminary data to support Claim 1, the Committee would like to see additional monitoring data to develop consistent, long-term trends.*

Recommendations:
Based on the Technical Review Committee's evaluation, the Committee recommends the following items to improve or insure system performance:

1. *The Committee encourages the applicant to continue gathering additional monitoring and/or performance data for existing or new installations for influent and effluent comparisons. The Committee would be willing to assist the applicant with designing a monitoring protocol.*
2. *The Committee encourages the applicant to participate in further tests of the product/technology at regional Third-Party testing centers.*
3. *The product should be installed and operated in accordance with manufacturer's directions.*

State Regulations:
A positive Advisory Opinion shall in no way be considered a substitute for compliance with individual state regulations. Every state's regulations are designed to reflect the concerns of that state. Information generated in this opinion is intended to alleviate the investigative work required by an individual state for the consideration of said technology for approval as an alternative/innovative technology. Before state approval of the technology, the technology must comply with all pertinent state regulations. The Technical Review Committee also recommends that each state have a control for insuring that the above-listed concerns are met, addressed, or closely monitored and tracked.

John R. McKernan, Jr.
Governor

Jane Sheehan
Commissioner

STATE OF MAINE
DEPARTMENT OF HUMAN SERVICES
AUGUSTA, MAINE

July 30, 1993

Mr. David W. Presby
Presby Construction, Inc.
Box 617
Sugar Hill, N.H. 03585

SUBJECT: Preliminary Approval - PRESBY MAZE - Septic Tank Accessories

Mr. Presby,

This office has given preliminary approval for the use of the PRESBY MAZE in Maine.

The device may only be installed and operated as specified by the manufacturer, Presby Construction Inc. Until the installation manual for Maine has been reviewed and approved, the manufacturer shall provide instruction for each installation.

The tank size shall meet the requirements of the PRESBY MAZE manufacturer but may not be smaller than required by the Maine Subsurface Wastewater Disposal Rules.

The inspection covers shall meet the minimum requirements of the manufacturer.

There shall be no reduction in disposal area sizing for the prospective improvement of effluent quality. However, effluent quality information from a MAZE installation may be utilized when evaluating that system for expansion.

This approval will lose preliminary status when the installation manual for Maine has been reviewed and approved.

This letter grants permission for the use of the product. It is not, and should not be construed as, a recommendation or endorsement. It is the responsibility of the owner, designer, and manufacturer to determine the suitability of the product for a specific use. This letter may be reproduced only in its' entirety.

Sincerely,

Kenneth L. Meyer
Wastewater & Plumbing Control
Division of Health Engineering

cc: Eugene Moreau, P.E.
Jay Hardcastle, State Site Evaluator
Kerwin Keller, State Plumbing Inspector

CHAPTER 7

DISPOSAL FIELDS

SECTION 700.0 GENERAL

700.1 Scope: This Chapter governs the requirements for disposal field design.

700.2 General: The design of a disposal field is dependent on the soil profile, type of the most limiting factor plus the volume and quality of the waste water and depth to the most limiting factor. Design Classes are used to describe both the soil limitations observed within the proposed disposal field and the required minimum design features. Design Classes are described in Table 700.1.

700.3 Owner/operator: The owner/operator shall accurately describe the intended uses (present and future) for the system. The owner shall operate the system within the design parameters, except as provided for in Section 1402, Expansion of Existing Structures, following the designer's recommendations for inspection and maintenance, as well as any State or local regulations.

700.4 Disposal field required: An approved disposal field is needed for all structures requiring subsurface waste water disposal, unless the structure is served by a holding tank complying with optional Chapter 22 or Section 1404.0 or is served by an alternative toilet with no gray water generated.

700.5 Kinds of disposal fields: For the purposes of this code, disposal fields include leach trenches, leach beds, proprietary disposal devices, peat disposal fields, or privies designed and installed in compliance with this code.

700.6 Sizing requirements: The size of a disposal field's required infiltration area is determined using design factors in compliance with Section 703.0 and Table 700.1 and design flows in compliance with Chapter 9.

700.7 Installation: A disposal field may be installed on any site that is in compliance with Tables 700.2 through 700.4 and is in compliance with Section 2005.0.

700.8 Vehicular traffic: Except where site limitations make it impractical, no driveway or parking or turning area may be located over any disposal field. When a system is placed under an area receiving vehicular traffic, H-20 loading components shall be installed.

700.9 Infiltration: Rain, surface, and ground water shall not be drained into any component of a system.

SECTION 701.0 LIMITING FACTORS

701.1 General: For the purpose of determining the design class, the soils in the area beneath the proposed disposal field(s) shall meet or exceed the criteria of the design class, as specified in Table 700.1 and Tables 700.2 through 700.4." See Section 1602.4 (Engineered disposal systems) for additional soil data requirements.

SECTION 702.0 SPECIAL CONSIDERATIONS

702.1 Soil profile 10: Disposal fields on Profile 10 soils shall comply with Table 700.3 and they shall receive prior approval of the plumbing inspector and the Department. First time systems and non-exempted expansion systems are not allowed on Profile 10 soils.

702.2 Soil profile 11: Soil profile 11 is an alluvial soil and its texture varies with the deposition process that laid it down. Therefore, for design purposes, use the soil profile class that best fits the observed soil textures.

702.3 Sites with two or more soil profiles: When two or more soil or profile classes are observed under a proposed disposal field, the design shall be based on the soil profile class which requires the largest disposal field.

702.4 Elevated disposal fields: All disposal fields designed entirely in fill material shall be sized using the disposal field size category of the original soil profile class observed below the fill material or the fill material which ever requires the largest disposal field.

702.5 Lined disposal field: Disposal fields designed with liners shall be sized using the medium large disposal field size category in Table 700.1.

702.6 Serial distribution: Serial distribution may be utilized when the following conditions have been met:

702.6.1 Pitch of connecting pipes: The pitch of the connecting pipes is 1/4 inch per foot or greater.

702.6.2 Separation distance: The separation distance between rows shall be as indicated in Appendix B.

SECTION 703.0 WASTEWATER STRENGTH ADJUSTMENTS FACTORS

703.1 General: When, as a result of an approved pre-treatment technique, the waste water entering a disposal field has a combined 5-day biochemical oxygen demand (BOD5) and total suspended solid (TSS) concentration of less than 175 milligrams per liter, the size of the disposal field may be adjusted by multiplying by the adjustment factors prescribed in

TABLE 703.1					
Adjustment factor for waste watter strengths					
different from typical domestic waste water					
		Adjustment Factor			
Strength of waste water	Adjustment Factor	with Enviro-septic and			
entering the disposal field	(AF)	Presby Maze system			
(BOD5 plus TSS					
30 or less milligrams/liter	0.5		0.50		
52	0.6		0.60		
82	0.7		0.65		
122	0.8		0.70		
175	0.9		0.70		
240	1.0		0.75		
320	1.1		0.80		
420	1.2		0.85		
530	1.3		0.90		
660	1.4		0.95		
810	1.5		1.00		
985	1.6		1.05		
1180	1.7		1.10		
1400	1.8		1.15		
1645	1.9		1.25		
1920	2.0		1.30		

CHAPTER 9

DESIGN FLOWS

SECTION 900.0 GENERAL

900.1 Scope: This Chapter governs the calculation of the design flow used for sizing disposal fields and septic tanks.

900.2 General: The design flows provided in this Chapter are based on empirical data collected over many years by numerous researchers. These design flows reflect system designs proven to function adequately over long periods of time. As such, these design flows anticipate variations in flow among different establishments of the same class as well as flow variations over time in the same establishment. These design flows also assume waste water with strengths typical of the class of establishment. The calculation of design flows based on water saving devices is a variance and requires prior approval of the Department.

900.3 Design flow: Each component of the system shall be designed and installed to adequately treat and dispose of the amount of waste water expected to be discharged from the premises to be served. Design flows for private residencies are prescribed in Section 901.0 and Table 901.1. Design flows for commercial or institutional establishments are prescribed in Section 902.0 and Section 903.0 and Table 901.2.

SECTION 901.0 DESIGN FLOWS FOR DWELLING UNITS

901.1 General assumptions: Typically, the waste water flow from a single-family dwelling unit falls within 10 to 300% of the average daily flows for dwelling units. Typically, the daily flow is within 50 to 150% of average daily flows. At the extreme, however, minimum and maximum daily waste water flows can range between 0 and 900% of the average daily flow. The minimum design flows, required by this code, reflect these variations.

901.2 Individual single-family dwelling units: The design flows for single-family dwelling units connected to individual systems shall be calculated based on Table 901.1.

901.3 Two or more dwelling units on a shared system: The design flow for two or more dwelling units on a shared system shall be calculated according to the design flow standards given in Table 901.1.

SECTION 902.0 OTHER FACILITIES USING DESIGN TABLES

902.1 General: The design flow shall be the maximum flow that may reasonably be expected to be discharged from a residential, commercial, or institutional facility on any day of operation. It shall be expressed in gallons per day. The design flow shall not be considered as an average daily flow. It incorporates a factor of safety over the average flows to accommodate peak waste water flows or facilities that discharge greater than the average flows of waste water either occasionally or on a regular basis. The design flow shall be calculated as follows:

902.2 Base flow: Multiply the number of gallons per person by the maximum number of persons expected per day, or multiply the number of gallons per facility per day by the number of facilities present or proposed.

902.3 Employee contribution: When employees will be present at the establishment, estimate the maximum number of employees who may be present during a single day of operation. Then add 15 gallons per employee per 8 hour shift, except where otherwise indicated.

902.4 Design flows: The requirements listed in Table 902.4 are minimum requirements for average facilities in the categories listed. In cases where a facility does not fall within any of the categories listed, or where actual water use data is available relating to the facility, the Department may approve the use of other documented criteria. In such a case, the value used for the design flow shall meet the requirements in Section 903.0.

SECTION 903.0 OTHER FACILITIES USING WATER METERS

903.1 Water meter records: The design flow may be calculated by actual water meter readings, provided the following procedures are used:

903.1.1 Acceptable records: Copies of billing records of the service provider or from water meters certified to be accurate within 2% by the water district;

903.1.2 One year minimum: Continuous records over the period of at least one year (or other period acceptable to the Department);

903.1.3 Like establishments: Records from the applicant's demonstrated use of the facilities or from two or more like establishments.

903.2 Adjustments for peak days: The average daily flows shall be adjusted for peak flow days as follows:

903.2.1 Daily monitoring: If water meter records are recorded on a daily basis, the day with largest recorded waste water flow shall be used for the design flow. If an applicant believes that the day

Type of facility	Design flow per user or unit
Delicatessen food prepared and no seats	100 gpd per deli or 1 gpd per meal served plus 15 gpd per employee [1, 2] (whichever is larger)
Delicatessen no food prepared and no seats	50 gpd per deli plus 15 gpd per employee [1]
Drive-in no full meals and no china service	30 gpd per car space plus 15 gpd/ employee [1, 2]
Eating place, fast food, no seats, no full meals, and no china service	100 gpd or 1 gpd per meal served plus 15 gpd per employee [1, 2] whichever is larger
Eating place, fast food, no full meals, and no china service	20 gpd per inside seat plus 7 gpd per outside seat plus 15 gpd/ employee [1, 2]
Employees at place of employment with no showers	15 gpd per employee [1]
Employees at place of employment with showers	20 gpd per employee [1]
Fairgrounds	2 gpd per attendee based on average daily attendance
Gyms, not associated with schools	10 gpd per participant plus 3 gpd per spectator plus 15 gpd per employee [1]
Health clubs	10 gpd per participant plus 3 gpd per spectator plus 15 gpd per employee [1]
Hospitals	150 gpd per bed plus 15 gpd per employee [1]
Hotels and motels with shared baths	80 gpd per bedroom plus 15 gpd per employee [1]
Hotels and motels with private baths	100 gpd per bedroom plus 15 gpd per employee [1]
Laundry, self-service	600 gpd per machine plus 15 gpd per employee [1]
Marina	100 gpd plus 10 gpd per slip or mooring (clothes washers are not included; design flow for clothes washers shall be calculated separately)
Medical offices, clinics, and dental offices	80 gpd per medical staff plus 5 gpd per patient plus 15 gpd/office employee [1]
Nursing Homes	150 gpd per bed plus 15 gpd per employee [1]
Parks and picnic areas, public rest rooms and no showers	5 gpd per attendee plus 15 gpd per employee [1]
Parks and picnic areas, public rest rooms and showers	10 gpd per attendee plus 15 gpd per employee [1]
Rooming houses, no meals	180 gpd per house plus 30 gpd per roomer
Rental cabins and cottages	50 gpd per bed plus 15 gpd per employee [1]
Rental cabins, housekeeping	50 gpd per cabin, plus 50 gpd per bed
Restaurant, one or two meals per day (e.g. breakfast and lunch)	20 gpd per indoor seat plus 7 gpd/outdoor seat plus 15 gpd per employee [1, 2]
Restaurant, three or more meals per day (e.g. breakfast, lunch, and dinner)	30 gpd per indoor seat plus 10 gpd per outdoor seat plus 15 gpd/employee [1, 2]
School, elementary	7 gpd per student plus 15 gpd per teacher and other employees [1]
School, junior high	9 gpd per student plus 15 gpd per teacher and other employees [1]
School, high	12 gpd per student plus 15 gpd per teacher and other employees [1]
School, boarding	75 gpd per student plus 15 gpd per teacher and other employees [1]
Service stations	500 gpd per 1st set of fuel pumps plus 300 gpd per each additional set of fuel pumps plus 15 gpd per employee [1]
Shopping centers or stores,public rest rooms and showers	400 gpd per water closet plus 20 gpd per shower plus 15 gpd per employee [1] Design flows for any eating places or butcher shops shall be determined and added to total design flow.
Shopping centers or stores, no public rest rooms	1 gpd per parking space plus 15 gpd per employee. [1] Design flows for any eating places or butcher shops shall be determined and added to total design flow. NOTE: Title 22 M.R.S.A. §270 requires a public rest room for shopping centers containing 6 or more separate retail establishments
Stands, ice cream only with no seats	150 gpd per stand plus 15 gpd per employee. [1, 2]
Tennis and racquetball courts	300 gpd per court plus 15 gpd per employee [1] Design flows for any eating places shall be determined and added to the total design flow
Visitors center	6 gpd per visitor plus 15 gpd/ employee (This includes libraries, museums, similar uses) [1]

NOTES: 1. The design flow for employees is based on the total number of employees present in any 24-hour period.

TABLE 700.1

SOIL PROFILE SOIL CONDITION DESIGN CLASS

SOIL CONDITION			DESIGN CLASS to be used with Table 700.2 "Minimum Permitting Conditions and Design Requirements"							Disposal Area Sizing
			Bedrock class			Soil drainage class				Multiply the hydraulic loading rate (square feet per gallon per day) times the design flow (gallons per day). This gives the minimum square feet of bottom and side wall area below the invert needed for a standard stone filled disposal field. Proprietary devices may be used in lieu of stone filled fields. See Appendix P.
			AI	AII	AIII	B	C	D	E	
Parent Material	Soil Profile	Textural Classification and description	Inches from ground surface to the mineral soil to bedrock			Inches from the surface of the mineral soil to seasonal high ground water table or hydraulically restrictive horizon when mottling is not present				
			0-<12	12-<15	15-48	> 48	48-15	<15-7	<7-0	
Basil Glacial Till	1	Silt loam textured soils throughout the entire profile. The lower horizons usually have prismatic or platy structures. This profile tends to become firm dense and impervious with depth thus this profile may have a hydraulically restrictive horizon. Angular rock fragments are usually present. Occasionally cobbles and stones maybe present	5	4	1	1	1	3	5	4.10 sqft/gpd Large
Ablation Till	2	Loam to sandy loam textured soils throughout the entire profile. This profile does not have a hydraulically restrictive horizon. Angular rock fragments are present. Occasionally cobbles and stones maybe present	5	4	1	1	1	3	5	3.30 sqft/gpd Medium Large
Basal Glacial Till	3	Loam to loamy sand textured soils throughout the entire profile. The lower soil horizons usually have well defined prismatic or platy structures that are very compact and are difficult to excavate. These lower horizons are considered hydraulically restrictive. Angular rock fragments are present. Occasionally cobbles and stones are present	5	4	1	1	1	3	5	3.30 sqft/gpd Medium Large
Ablation Till	4	Sandy loam to loamy sand textured upper horizon(s) overlying loamy sand textured lower horizon. This profile tends to be loose and easy to excavate. Lower horizons tend not to be firm and are not considered hydraulically restrictive. Angular rock fragments are present along with partially water-worn cobbles and stones	5	4	1	1	1	3	5	2.60 ft^2/gpd Medium
Stratified Glacial Drift	5	Loam to loamy sand textured upper horizons overlying fine and medium sand parent materials. Stratified horizons of water-sorted materials may be present. Lower horizons tend to be granular or massive. Entire profile tends to be loose except that saturated horizons may be cemented and therefore firm and are considered hydraulically restrictive. Horizons with rounded rock fragments are common	5	4	2	2	2	3	5	2.60 ft^2/gpd Medium
Stratified Glacial Drift	6	Loamy sand to sand textured upper horizons overlying stratified coarse sands or gravel parent materials. Stratified horizons of water-sorted materials maybe present. Entire profile tends be to loose except that saturated horizons may be cemented and therefore firm and are considered hydraulically restrictive. Horizons with rounded rock fragments are common.	5	4	2	2	2	3	5	2.00 ft^2/gpd Small
Mixed geologic-al origins	7	Fifteen (15) or more inches of sandy loam to loamy sand glacial till or loamy sand to sand stratified drift parent material overlying marine or lacustrine deposited silt to silty clay or fifteen (15) or more inches of loamy sand to sand stratified drift parent material overlying firm basal till. The upper horizons tend to be granular in structure. The lower horizons tend to be firm and massive in structure and are considered to be hydraulically restrictive. Rock fragments may be present in upper horizons but are usually absent in lower horizons, except for basal till.	5	4	1	1	1	3	5	3.30 ft^2/gpd Medium Large
Lacus-trine deposits	8	Loam to fine sandy loam upper horizon(s) overlying firm silt loam to silt textured lower horizons. The upper horizons tend to be granular in structure. The lower horizons tend to be firm and massive in structure and are considered to be hydraulically restrictive. Stratified lenses of fine sand and sandy loam may be present in the lower horizons. Coarse rocks are usually absent throughout entire profile.	5	4	1	1	1	3	5	4.10 ft^2/gpd Large
Marine deposits	9	Silt loam textured upper horizons overlying firm silt loam to silty clay textured lower horizons. The lower horizons tend to be very firm and are considered to be hydraulically restrictive. Coarse rock are usually absent throughout entire profile. Thin lenses of very fine sand to silt may be present in the lower horizons.	5	4	1	1	1	3	5	5.00 ft^2/gpd Extra Large
Organic deposits	10	Partially decomposed organic material at least 16' in thickness.	5							
Alluvial dune beach deposits	11	These soils have no typical profile. Variable in texture and exhibit very little weathering. They are deposited in flood plains sand dunes or beach environments.	Use the Soil Profile Bedrock Class Soil drainage Class and minimum hydraulic loading rate that best describes the observed profile.							
Filled Sit (5/3/95)	12	These soils have no typical profile. Variable in texture. May contain man-made materials.	Use the Soil Profile Bedrock Class Soil drainage Class and minimum hydraulic loading rate that best describes the observed profile. For first time and non-exempt expansion systems see Section 605.0 .							

LINEAR FEET OF ENVIRO-SEPTIC PIPE REQUIRED

Soil Profile	2 Bedroom 180 Gal./day	3 Bedroom 270 Gal./day	4 Bedroom 360 Gal./day	5 Bedroom 450 Gal./day	6 Bedroom 540 Gal./day	Each Additional Bedroom 90 Gal./day	Soil Profile	Linear Feet Per 100 Gal. Per Day
4.10 1	148	221	295	369	443	74	1	82
3.30 2	119	178	238	297	356	59	2	66
3.30 3	119	178	238	297	356	59	3	66
2.60 4	94	140	187	234	281	47	4	52
2.60 5	94	140	187	234	281	47	5	52
2.00 6	72	108	144	180	216	36	6	40
3.30 7	119	178	238	297	356	59	7	66
4.10 8	148	221	295	369	443	74	8	82
5.00 9	180	270	360	450	540	90	9	100

This chart is based on one linear foot of Enviro-Septic pipe being equal to five (5) sq. ft. of stone infiltration area.

Fig. #1

	Design Flow		Adjustment Factor with E-S & Maze									
	DF	X	AF	X	HLR	=	MAI	/	5	=	Linear Ft. of E-S	
	1000	X	1.3	X	2.6	=	3380	/	5	=	676	
	1000	X	0.75	X	2	=	1500	/	5	=	300	
	3000	X	1	X	2	=	6000	/	5	=	1200	
	1000	X	0.65	X	2	=	1300	/	5	=	260	
	540	X	0.75	X	2	=	810	/	5	=	162	
	450	X	0.75	X	2	=	675	/	5	=	135	
	360	X	0.75	X	2	=	540	/	5	=	108	
	270	X	0.75	X	2	=	405	/	5	=	81	
	180	X	0.75	X	2	=	270	/	5	=	54	
	180	X	0.9	X	2	=	324	/	5	=	64.8	
	180	X	0.9	X	2.6	=	421.2	/	5	=	84.24	
	180	X	0.9	X	3.3	=	534.6	/	5	=	106.92	
	180	X	0.9	X	4.1	=	664.2	/	5	=	132.84	
	180	X	0.9	X	5	=	810	/	5	=	162	
	1000	X	0.5	X	2	=	1000	/	5	=	200	
	1000	X	0.6	X	2	=	1200	/	5	=	240	
	1000	X	0.7	X	2	=	1400	/	5	=	280	
	1000	X	0.8	X	2	=	1600	/	5	=	320	
	1000	X	1	X	2	=	2000	/	5	=	400	
	1000	X	1.1	X	2	=	2200	/	5	=	440	
	1000	X	1.2	X	2	=	2400	/	5	=	480	
	1000	X	1.3	X	2	=	2600	/	5	=	520	

Author: TGROVES@neiwpcc.org at Internet
Date: 2/11/98 3:10 PM
Priority: Normal
TO: James Jacobsen at DHE
Subject: Presby Maze and AWT Bioclere Advisory Opinions
---------- Message Contents ----------

** High Priority **

Bill Evans, Bob Minicucci and I had a very productive meeting with Presby Environmental at the NH DES office on Monday 2/9. The reasons for the meeting were to assist Presby in developing a meaningful sampling program (I'll report on this at the 2/18 meeting). Also discussed was the Advisory Opinion for the Maze.

The draft I mailed to you was discussed and we have the following suggestions as proposed by the applicants (Bob and I both agree they seem reasonable).

1-Revise first "Response to Claim" to read as follows: The Committee agrees that the technology is capable of meeting Claim #1, however, additional data/testing is needed to document these results can be achieved on a consistent, long-term basis. The committee ...

2-Revise #2 General Observations/Concerns to read as follows: The product/technology does not appear to require any special maintenance, however, septic tanks with the product installed may have to be pumped more frequently, or tank sizes increased due to the collection of a higher percentage of suspended solids.

For AWT Bioclere, they propose the following re-wording:

1-Agreed to keep General Observation #2 the same - "Excessive Oil and grease may impact the performance of the trickling filter".

2-Agreed to delete General Observation # 3 - % of oil/grease removal

3-Add another General Observation - "For higher levels of nitrogen removal, the Committee advises the product/technology utilize tertiary treatment to meet the stated performance claim."

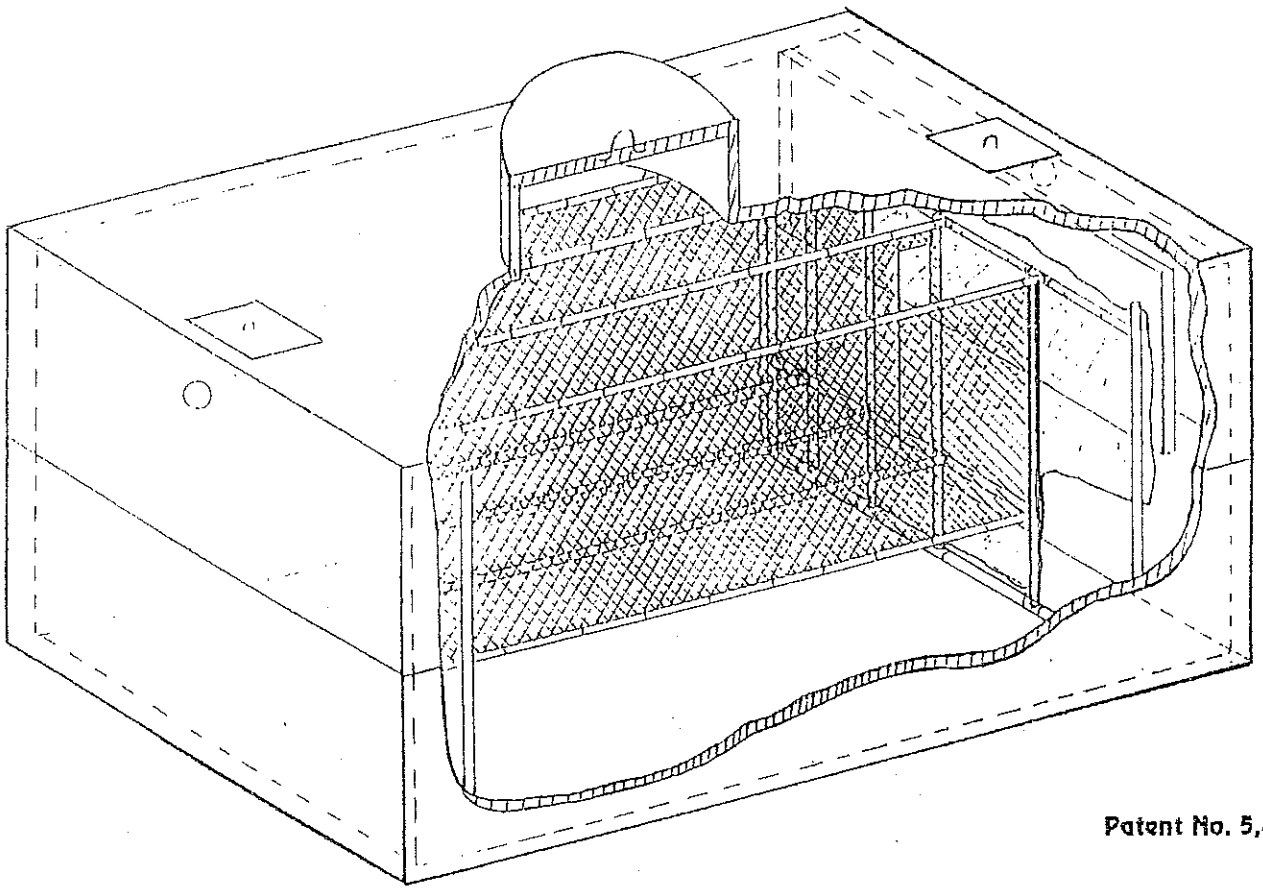
OR

4-Revise the Response to Claim to read as follows: The Committee agrees that the product/technology meets the above stated performance claim with the exception of the total nitrogen claim on a consistent basis. Tertiary treatment is recommended by the Committee to achieve consistent levels of nitrogen removal as stated in the claim.

I'll be out of the office til Tuesday, Feb 17. Please get me any comments by then so we can finalize these at the meeting on the 18th. Thanks.

Hand Delivered
2/18/98

PRESBY MAZE™ For Septic Tanks



Patent No. 5,429,752

prepared by

Presby Environmental, Inc.

Innovative Septic Technologies

Manufacturer/Distributor

Box 617

Sugar Hill, NH 03585-0617

(603) 823-5298

Request For Advisory Opinion of The Presby Maze

From: Presby Environmental, Inc.

To: New England Interstate Water Pollution Control Commission
Technical Review Committee

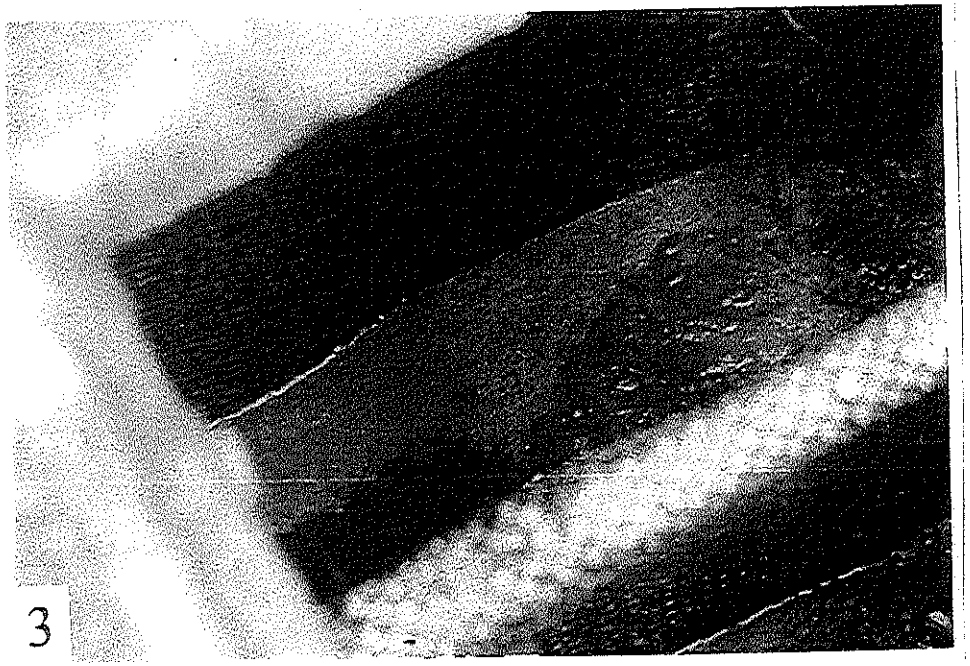
Presby Environmental, Inc. respectfully requests that the New England Interstate Water Pollution Control Commission recognize that The Presby Maze is performing equal to or better than it's claims and issue an advisory opinion as follows:

- New England states approve The Presby Maze to be used in a manor similar to it's use in NH.
- The Presby Maze be granted a leach area reduction consistent with individual state regulations.

A PRESBY MAZE™ in action....

1

2



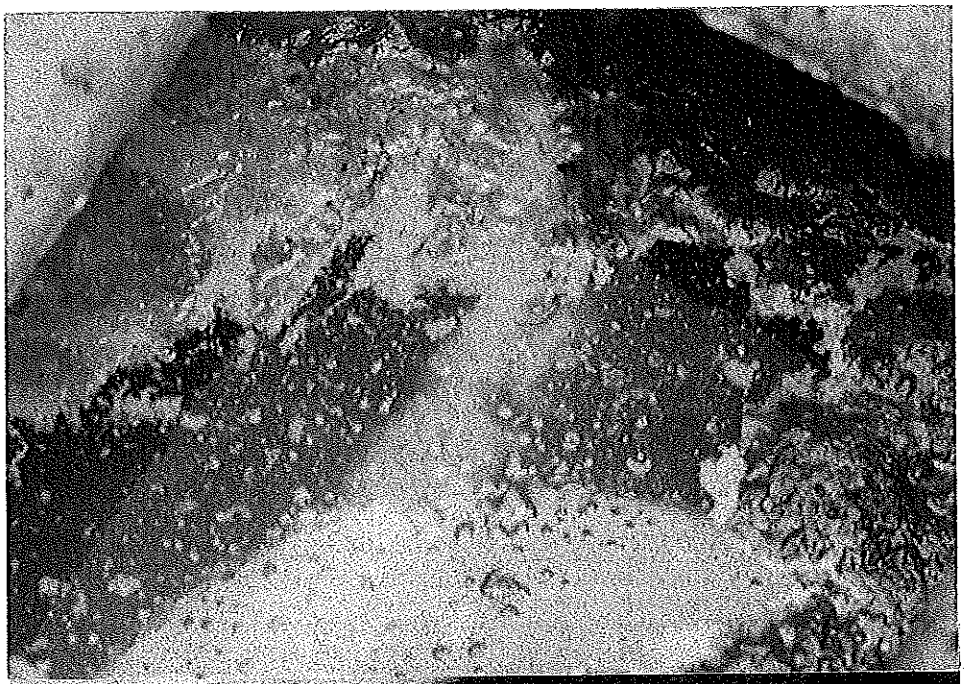
3

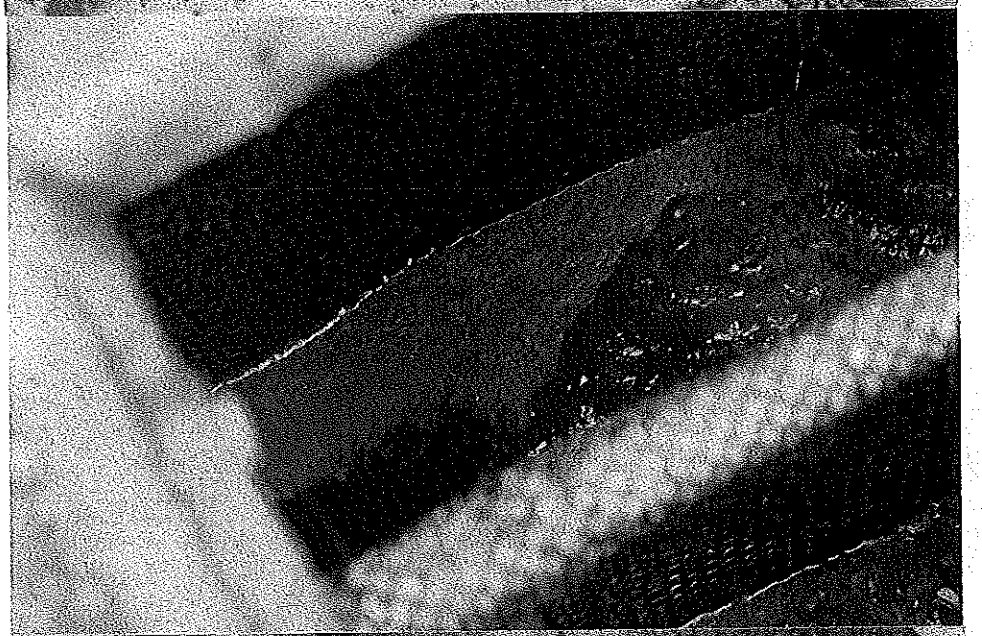
These photos were taken during pumping of a septic tank with a Presby Maze installed, after only **4 1/2 months** of use, in a restaurant system.

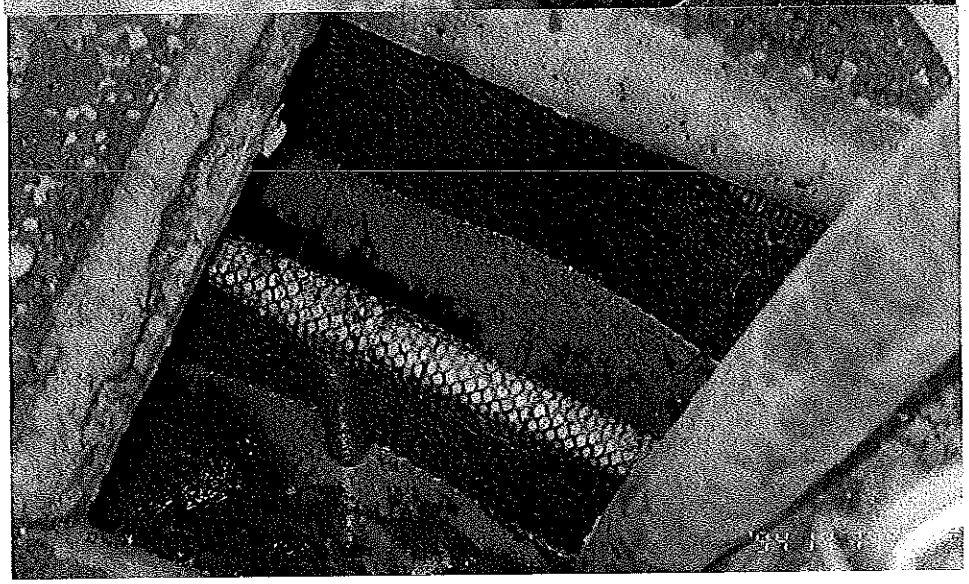
This Presby Maze is in the **fourth tank** in a series that includes a grease trap, primary, and secondary tank. The secondary tank had no visible solids when pumped.

The solids in these photos **escaped three previous tanks** and would have gone to the leachfield without the Presby Maze.

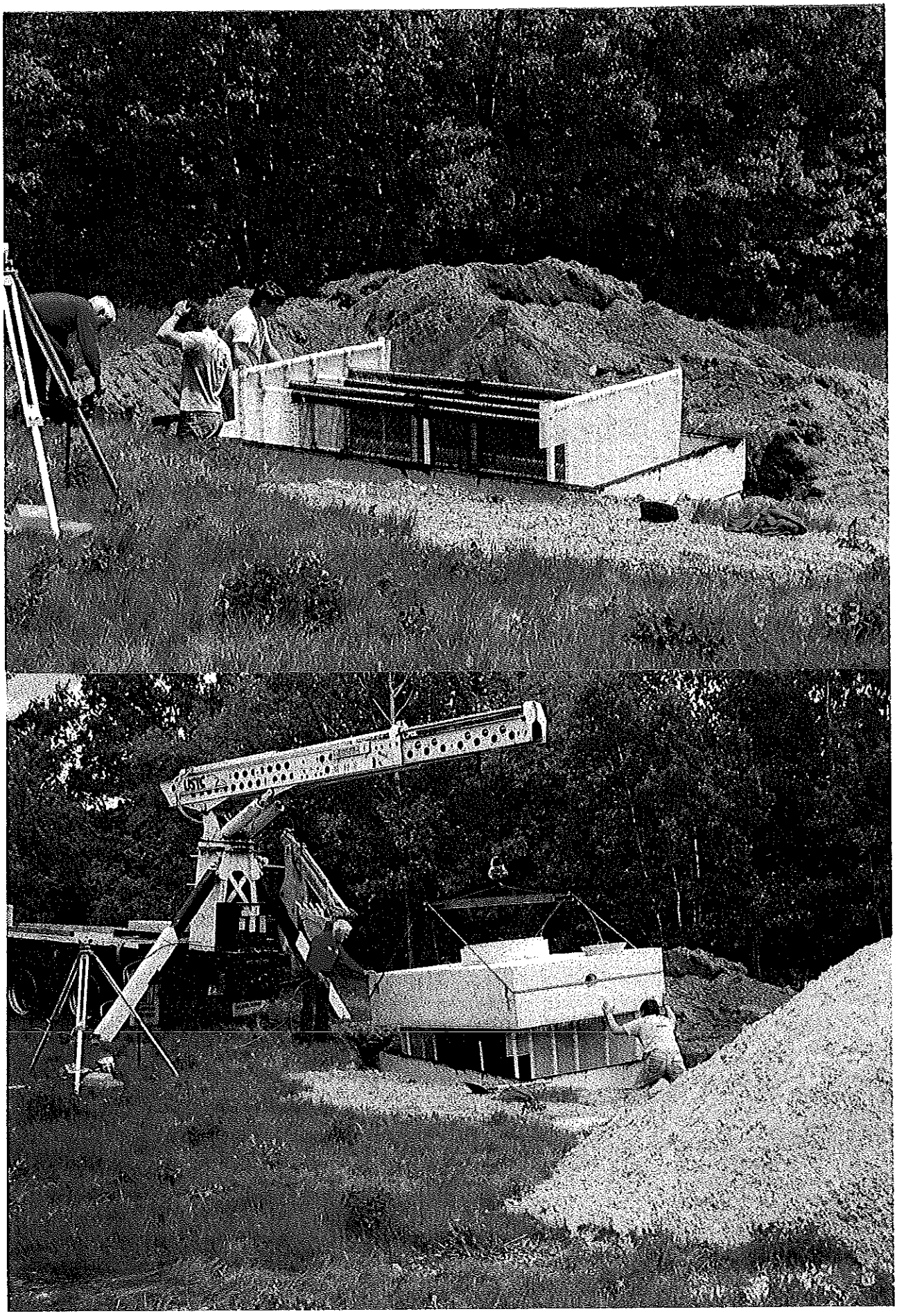
Cleaning Presby Maze Septic Tank







PRESBY MAZE INSTALLATION



P.E.I.

PRESBY ENVIRONMENTAL, INC.
Innovative Septic Technologies
Enviro-Septic/Presby Maze
Manufacturer/Distributor
PO Box 617
Sugar Hill, NH 03585
(603) 823-5298

The Presby Maze

The Presby Maze is a patented product patent # 5,429,752. The Presby Maze is a simple plastic devise inserted inside a septic tank designed to trap suspended solids inside the tank before they reach the leach area. The Presby Maze uses a network of vertical mesh panels to provide a large surface area for naturally sticky suspended solids to collect on. Solids on the mesh attract other solids forming globules. Some globules become heavier slithering down the mesh and sinking to the bottom of the tank. Others become more buoyant and creep up the mesh panels to the liquid surface. The Presby Maze never needs any maintenance or cleaning. During normal septic tank pumping when the liquid (and Buoyancy factor) is removed from the tank solids separate from the mesh and are pumped out. The Presby Maze provides for smaller, less expensive, longer lasting, leach areas that are environmentally safer. A number of recent tests show that septic tanks equipped with the Presby Maze are trapping over 90% of the suspended solids. State officials in New Hampshire are convinced of the Presby Maze's advantages enough to allow up to a 25% reduction of commercial leach area size when it is used.

The Test Site at Mittersill

The septic system which incorporates the Presby Mazes' sampled for these tests has a design flow of 19,625 GPD. The system services a resort which includes a restaurant, hotel, and condominiums, as well as several individual residences. We used this site for our tests for several reasons. There is constant flow of effluent allowing for sampling any time of the day. The system location is out of sight and allows sampling without disturbing customers. The resort owners have contracted us to monitor the system and oversee it's maintenance.

The original stone leach area was installed in 1975 and began to show signs of failure within two years, but was never replaced. The current system installed in 8/96 uses Enviro-Septic and the Presby Maze and is considerably smaller than the original stone bed. The new system was in operation for about 10 months when the Maze tanks were first pumped. The owners were on site during pumping and couldn't believe what they saw. In 10 months of operation about three feet of sludge had escaped the primary tanks and accumulated in the Maze Tanks. As a precaution, since there was so much sludge accumulating, we added two more Maze tanks to each of the existing four Maze tanks. Twelve Presby Mazes and 13,200' of Enviro-Septic handling 19,625 GPD of commercial waste water provides an excellent test site for our products.

APPROVAL FOR OPERATION

CA1996003150

N.H. DEPARTMENT OF ENVIRONMENTAL SERVICES
WATER SUPPLY & POLLUTION CONTROL DIVISION
P.O. BOX 95, 6 HAZEN DRIVE, CONCORD, NH 03302-0095

APPROVAL NO. CA1996003150

AMENDED DUE TO:

OWNER:

MITTERSILL ALPINE RESORT
193 MITTERSILL ROAD
FRANCONIA NH 03580-

COPY SENT TO:

BOARD OF SELECTMEN
PO BOX F
FRANCONIA NH 03580-

Lot Numbers: 25 / 179
Subd. Appvl. No.: 179
Subd. Name:
County: GRAFTON
Registry Book No.: 1985
Registry Page No.: 255
Probate Docket No.: (If Applicable)
Type of System: - EE
19625 GPD

Town/City Location: FRANCONIA

Street Location: RTE 117

Installer D. PRESBY Permit No. 349

☐ Owner Installed For His Domicile

Was Inspected On (Date) 5/23/96
Before Covering And Is Hereby Approved For Use.

Date Approved: 9/4/96

By: [signature]
Authorized Agent Of N.H. Water Supply And Pollution Control Division

(OVER)

Subsurface waste disposal systems must be operated and maintained in a manner so as to prevent nuisance or health hazard due to system failure.
(RSA 485-A:37)

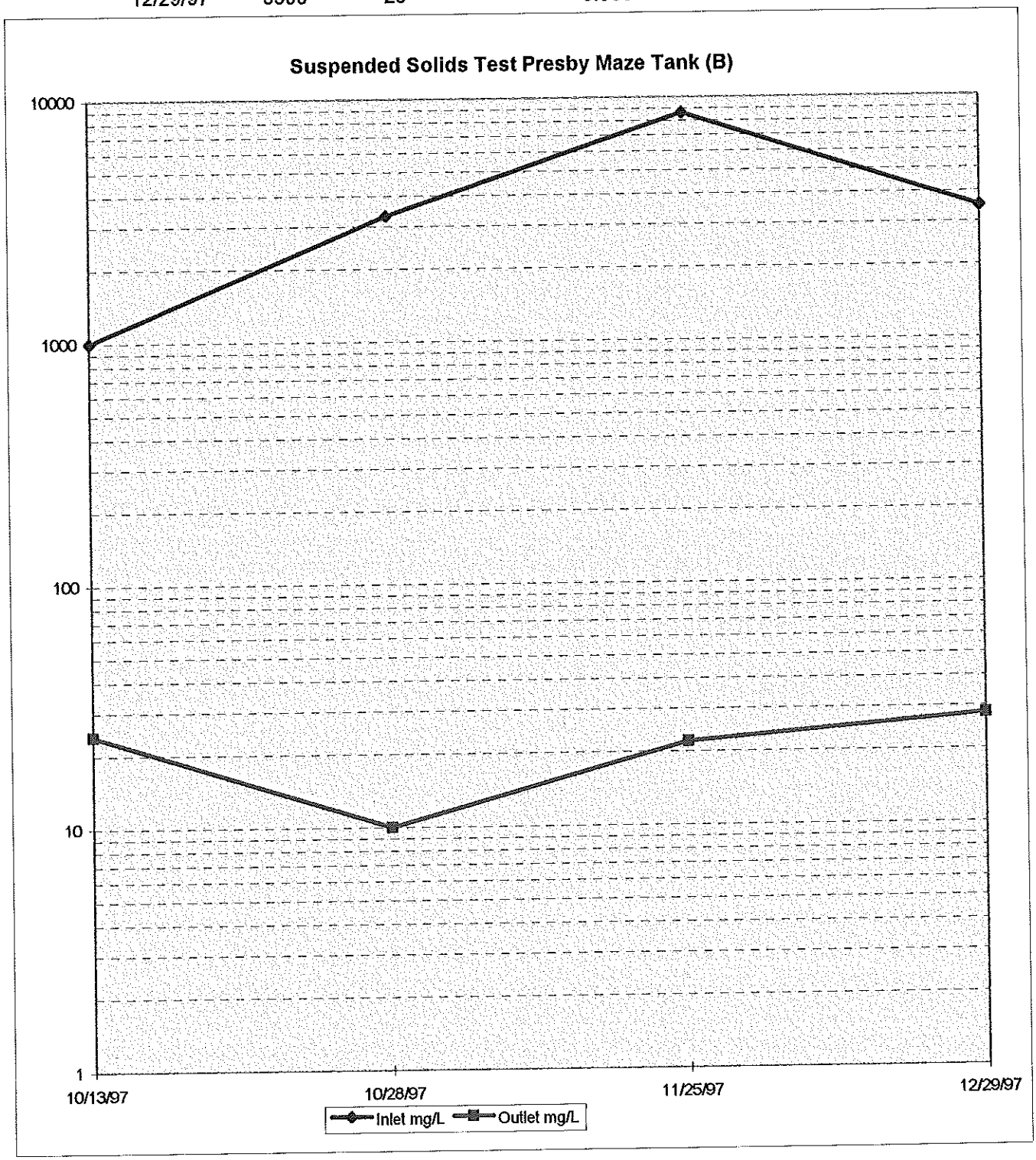
It is unlawful to discharge any hazardous chemicals or substances into subsurface waste disposal systems. Included are paints, thinners, gasoline and chlorinated hydrocarbon solvents such as TCE, sometimes used to clean failed septic systems and auto parts.
(Env-Ws 410.05)

REVISED 8/91 19960322

APPLICANT'S

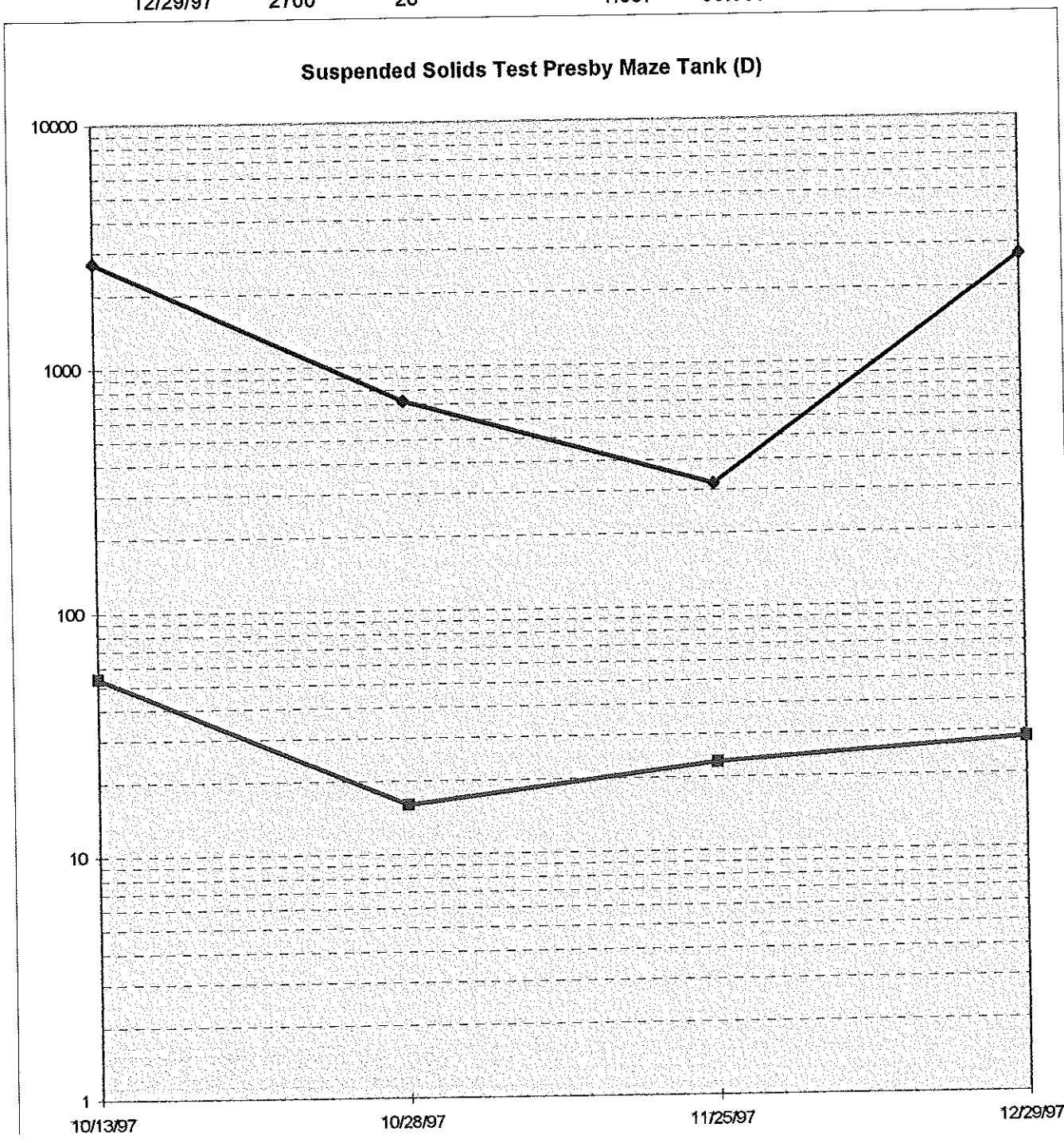
TEST RESULTS PRESBY MAZE TANK (B) - MITTERSILL SITE

Suspened Solid			Percentages %	
Date of Test	Inlet mg/L	Outlet mg/L	Passing	Retained
10/13/97	1000	24	2.400	97.600
10/28/97	3300	10	0.303	99.697
11/25/97	8600	22	0.256	99.744
12/29/97	3500	28	0.800	99.200



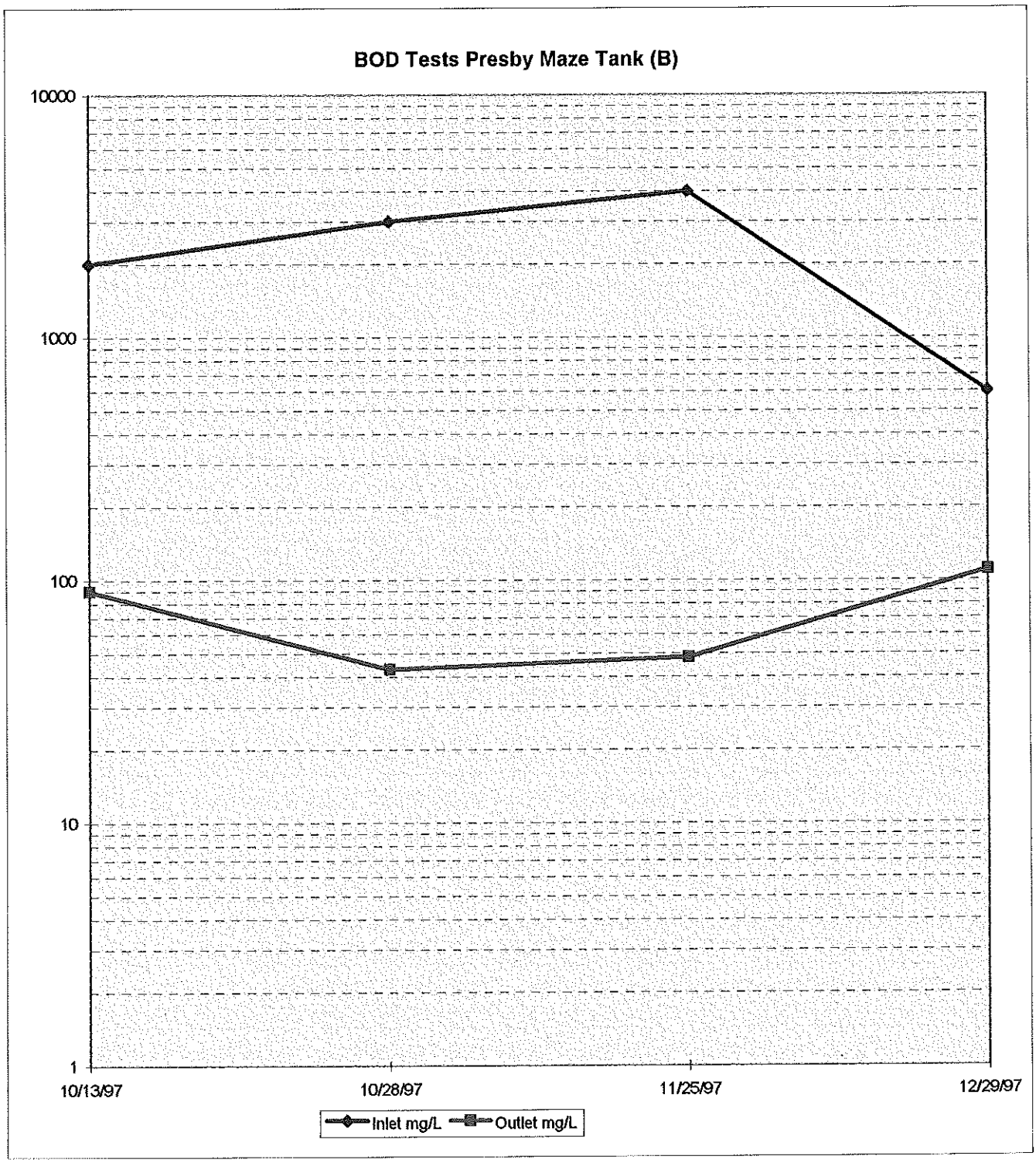
TEST RESULTS PRESBY MAZE TANK (D) - MITTERSILL SITE

Suspened Solid			Percentages %	
Date of Test	Inlet mg/L	Outlet mg/L	Passing	Retained
10/13/97	2700	54	2.000	98.000
10/28/97	720	16	2.222	97.778
11/25/97	320	23	7.188	92.813
12/29/97	2700	28	1.037	98.963



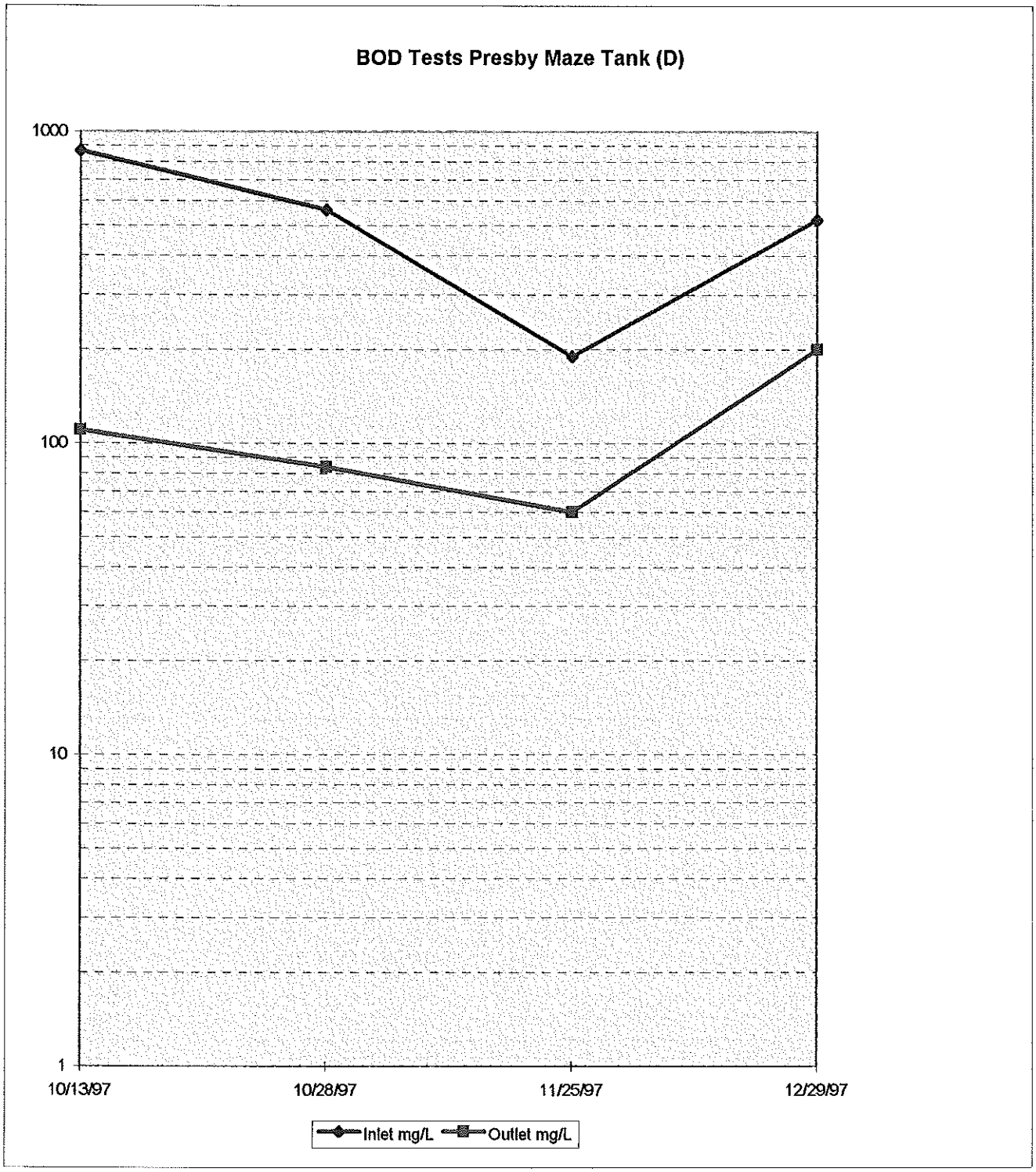
TEST RESULTS PRESBY MAZE TANK (B) - MITTERSILL SITE

Maze Tank (B) BOD			Percentages %	
Date of Test	Inlet mg/L	Outlet mg/L	Passing	Retained
10/13/97	2000	90	4.500	95.500
10/28/97	3000	43	1.433	98.567
11/25/97	4000	48	1.200	98.800
12/29/97	600	110	18.333	81.667



TEST RESULTS PRESBY MAZE TANK (D) - MITTERSILL SITE

Maze Tank (D) BOD			Percentages %	
Date of Test	Inlet mg/L	Outlet mg/L	Passing	Retained
10/13/97	870	110	12.644	87.356
10/28/97	560	84	15.000	85.000
11/25/97	190	60	31.579	68.421
12/29/97	520	200	38.462	61.538



SUMMARY and LOCATION of PRESBY MAZE TANK TESTS

Maze Tank (B) Suspened Solid

Date of Test	Inlet Test #	Inlet mg/L	Outlet Test #	Outlet mg/L	Percentages % Passing	Retained
10/13/97	1	1000	2	24	2.400	97.600
10/28/97	10	3300	11	10	0.303	99.697
11/25/97	1	8600	2	22	0.256	99.744
12/29/97	1	3500	2	28	0.800	99.200

Maze Tank (B) BOD

Date of Test	Inlet Test #	Inlet mg/L	Outlet Test #	Outlet mg/L	Percentages % Passing	Retained
10/13/97	1	2000	2	90	4.500	95.500
10/28/97	10	3000	11	43	1.433	98.567
11/25/97	1	4000	2	48	1.200	98.800
12/29/97	1	600	2	110	18.333	81.667

Maze Tank (D) Suspened Solid

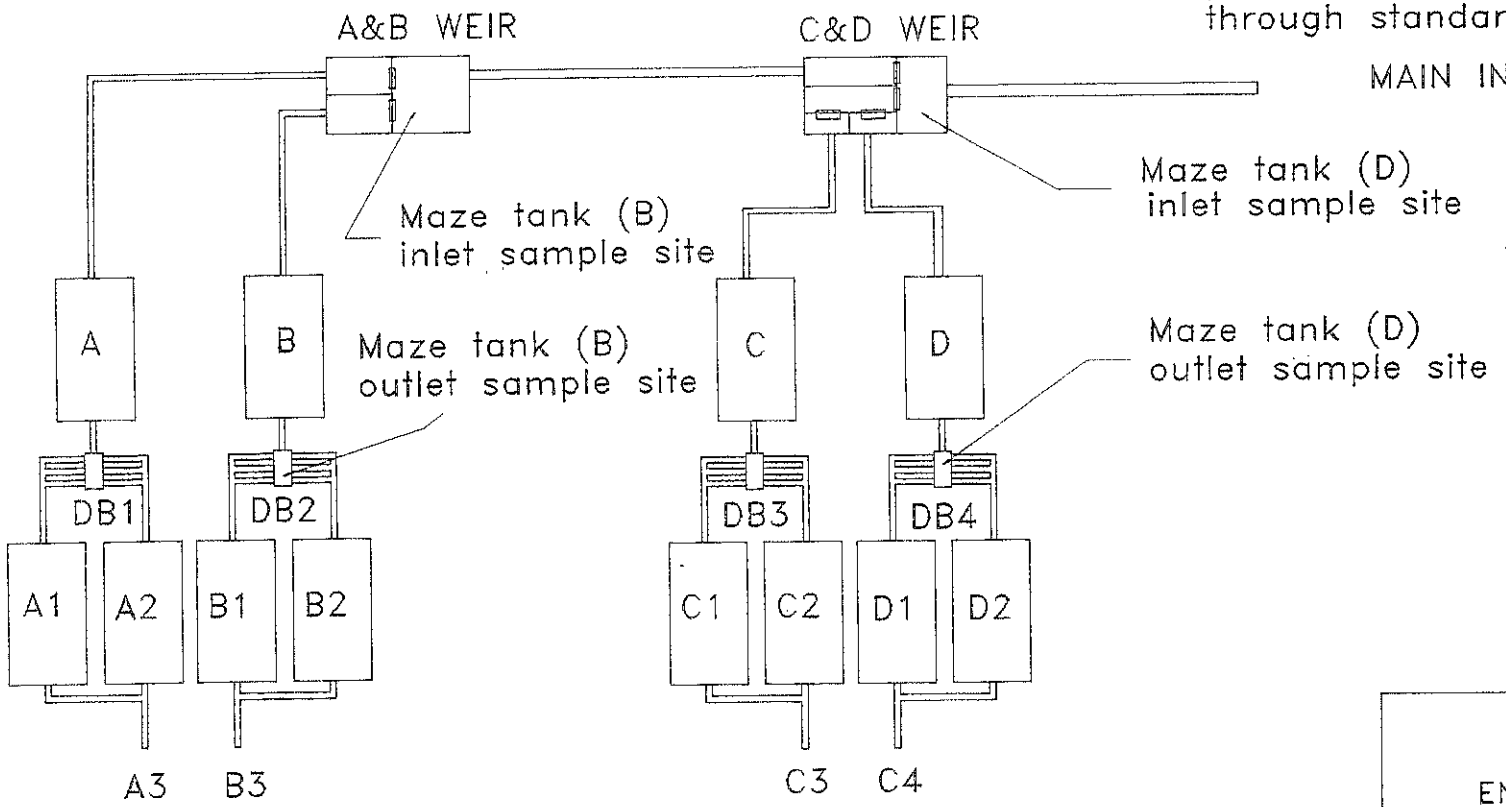
Date of Test	Inlet Test #	Inlet mg/L	Outlet Test #	Outlet mg/L	Percentages % Passing	Retained
10/13/97	4	2700	5	54	2.000	98.000
10/28/97	20	720	21	16	2.222	97.778
11/25/97	3	320	4	23	7.188	92.813
12/29/97	3	2700	4	28	1.037	98.963

Maze Tank (D) BOD

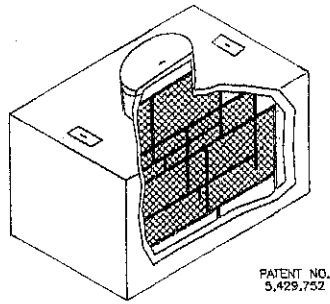
Date of Test	Inlet Test #	Inlet mg/L	Outlet Test #	Outlet mg/L	Percentages % Passing	Retained
10/13/97	4	870	5	110	12.644	87.356
10/28/97	20	560	21	84	15.000	85.000
11/25/97	3	190	4	60	31.579	68.421
12/29/97	3	520	4	200	38.462	61.538

Samples tested by: Eastern Analytical, Inc.
25 Chenell Drive
Concord, N.H. 03301

Approx. flow of 20,000 gal. per day has already passed through standard septic tanks



THE PRESBY MAZE™
FOR SEPTIC TANKS



PATENT NO. 5,429,752

A,B,C&D 3000 GAL. SEPTIC TANKS WITH MAZES
DB1,DB2,DB3 & DB4 DISTRIBUTION BOXES W/ EQUALIZERS
A1,A2,B1,B2,C1,C2,D1&D2 2000 GAL. SEPTIC TANKS WITH MAZES
A3,B3,C3 & D3 OUTLETS TO INDIVIDUALS ENVIRO-SEPTIC LEACH FIELDS

PRESBY
ENVIRONMENTAL INC.
INNOVATIVE SEPTIC TECHNOLOGIES
RT. 117, SUGAR HILL, N.H. 03585
PHONE:603-823-5298

TEST SITE FOR PRESBY MAZE LOCATION: MITTERSILL, FRANCONIA, N.H.	
DRN. BY: *David W. Presby*	
SCALE 1'=20'	CHECKED BY: T.B.P.
DATE: 12/19/97	DRAWING #: 001

LABORATORY REPORT

Eastern Analytical, Inc. ID#: **10267** PEN

Client: Presby Environmental

Client Designation: **Maze Tank Mittersill**

Sample ID:	#1 Mittersill	#2 Mittersill	#3 Mittersill			
Matrix:	aqueous	aqueous	aqueous			
Date Rec'd:	10/13/97	10/13/97	10/13/97			
Units (unless noted):	mg/L	mg/L	mg/L	Date of Analysis	Analyst	Method
Suspended Solids	1,000	24	32	10/20/97	JM	160.2
BOD	≥ 2,000	90	81	10/15/97	JM	405.1

Approved by: Lorraine Olashaw, Inorganic Supervisor Lorraine Olashaw

LABORATORY REPORT

Eastern Analytical, Inc. ID#: 10266 PEN

Client: Presby Environmental

Client Designation: **Maze Mittersill**

Sample ID:	#4	#5	#6			
Matrix:	aqueous	aqueous	aqueous			
Date Rec'd:	10/13/97	10/13/97	10/13/97			
Units (unless noted):	mg/L	mg/L	mg/L	Date of Analysis	Analyst	Method
Suspended Solids	2,700	54	22	10/20/97	JM	160.2
BOD	870	110	< 60	10/15/97	JM	405.1

Approved by: Lorraine Olashaw, Inorganic Supervisor

Lorraine Olashaw

LABORATORY REPORT

Eastern Analytical, Inc. ID#: 10463 PEN

Client: Presby Environmental

Client Designation: **Mittersill Site**

Sample ID:	#10	#11	#12	#20			
Matrix:	aqueous	aqueous	aqueous	aqueous			
Date Rec'd:	10/28/97	10/28/97	10/28/97	10/28/97			
Units (unless noted):	mg/L	mg/L	mg/L	mg/L	Date of Analysis	Analyst	Method
Suspended Solids	3,300	10	66	720	10/29/97	JM	160.2
BOD	≤ 3,000*	43	85	560	10/29/97	JM	405.1

Sample ID:	#21	#22			
Matrix:	aqueous	aqueous			
Date Rec'd:	10/28/97	10/28/97			
Units (unless noted):	mg/L	mg/L	Date of Analysis	Analyst	Method
Suspended Solids	16	40	10/29/97	JM	160.2
BOD	84	56	10/29/97	JM	405.1

* Sample depletion not enough to be determined a "valid" result. Approximate concentration for BOD is 2,200 mg/L
11/4/97 LO

Approved by: Lorraine Olashaw, Inorganic Supervisor Lorraine Olashaw

LABORATORY REPORT

Eastern Analytical, Inc. ID#: 10857 PEN

Client: Presby Environmental Client Designation: **none**

Sample ID:	#1	#2	#3	#4			
Matrix:	aqueous	aqueous	aqueous	aqueous			
Date Rec'd:	11/25/97	11/25/97	11/25/97	11/25/97			
Units (unless noted):	mg/L	mg/L	mg/L	mg/L	Date of Analysis	Analyst	Method
Suspended Solids	8,600	22	320	23	12/01/97	MOS	160.2
TKN	94	24	15	26	12/11/97	KL	351.4
BOD	4,000	48	190	< 60	11/26/97	MOS	405.1

Approved by: Lorraine Olashaw, Inorganic Supervisor Lorraine Olashaw

LABORATORY REPORT

Eastern Analytical, Inc. ID#: **11203** PEN

Client: Presby Environmental

Client Designation: **Maze Tanks Mittersill**

Sample ID:	#1	#2	#3	#4			
Matrix:	aqueous	aqueous	aqueous	aqueous			
Date Rec'd:	12/29/97	12/29/97	12/29/97	12/29/97			
Units (unless noted):	mg/L	mg/L	mg/L	mg/L	Date of Analysis	Analyst	Method
Suspended Solids	3,500	28	2,700	28	12/31/97	JG	160.2
BOD	< 600*	110	520	200	12/31/97	MOS	405.1

* Estimated BOD concentration = 460 ppm BOD. The change in initial and final BOD readings was not great enough to calculate a valid BOD concentration, however the change was large enough to estimate the BOD concentration.

Approved by: Lorraine Olashaw, Inorganic Supervisor Lorraine Olashaw