Maine Center for Disease Control and Prevention
An Office of the Department of Health and Human Services

John E. Baldacci, Governor Brenda M. Harvey, Commissioner

Department of Health and Human Services
Maine Center for Disease Control and Prevention
286 Water Street
11 State House Station
Augusta, Maine 04333-0011
Tel: (207) 287-8016
Fax: (207) 287-9058; TTY: 1-800-606-0215

July 22, 2008

Infiltrator Systems Inc.
Attn.: David Lentz, P.E.
P. O. Box 768
Old Saybrook, CT 06475

Subject: Product Registration, TW Series Septic Tanks

Dear Mr. Lentz:

The Division of Environmental Health has completed a review of a registration application for your company's product. This information was submitted pursuant to Section 1802 of the Maine State Plumbing Code, Subsurface Wastewater Disposal Rules (Rules), for code registration, for use in Maine.

Product Description

The TW Series septic tanks consist of five models: TW-375 (375 gallons capacity), TW-900 (900 gallons capacity), TW1050 (1,050 gallons capacity), TW-1250 (1,250 gallons capacity), and TW-1500 (1,500 gallons capacity).

Claim

According to the information you provided, the TW Series septic tanks comply with the IAPMO/ANSI Z1000-2007 standard for plastic septic tanks.

Determination

On the basis of the information and sample product submitted, the Division has determined that the TW Series septic tanks are acceptable for use in the State of Maine, provided that they is installed, operated, and maintained in conformance with the manufacturer's directions.

In the event that the product fails to perform as claimed by the applicant, use of the product in Maine, including all installations approved pursuant to Chapter 18 of the Rules, shall cease. Use of the product shall not resume until the applicant and the Division have reached a mutually acceptable agreement for resolving the failure to perform as claimed.

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 TW Series septic tanks. Further, registration of this product for use in the State of Maine does not represent Division preference or recommendation for this product over similar or competing products.

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

Sincerely,

James A. Jacobsen

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

/jaj

xc: Product File

Jacobsen, James

From: Lentz, Dave [dlentz@infiltratorsystems.net]
Sent: Friday, July 18, 2008 9:40 AM
To: Jacobsen, James
Subject: Infiltrator tank approval request
Attachments: ME tank approval request_071708.pdf; ME Tank suggested approval letter.doc

Jim,
As discussed, Infiltrator's tank approval request is attached. I also included the MS Word version of our suggested draft approval letter, which is modeled from the letter issued to Fralo, in case you would like to use any of it.

If you have any questions or require additional information, please let me know.

Dave

David Lentz, P.E.
Senior Engineer
Infiltrator Systems Inc.
6 Business Park Road
Old Saybrook, CT 06475
(860) 577-7198 (office)
(860) 575-8099 (mobile)
(860) 577-7793 (fax)
dlentz@infiltratorsystems.net
www.infiltratorsystems.com

INFILTRATOR® SYSTEMS INC

Environmental Onsite Wastewater Solutions™

July 17, 2008

Mr. James Jacobsen
Subsurface Wastewater Program
Division of Environmental Health
Maine Department of Health and Human Services
286 Water Street, 3rd Floor
Augusta, ME 04333-0011

Re: Request for Approval of Infiltrator TW-Series Septic Tanks

Dear Mr. Jacobsen,

Infiltrator Systems Inc. (Infiltrator) requests approval of its TW-series septic tanks by the Maine Department of Health and Human Services. The objective in submitting this review request is to obtain an approval letter from the Department for tanks with the following nominal capacities:

- Infiltrator TW-375 (375-gallon dosing tank)
- Infiltrator TW-900 (900-gallon effective capacity septic tank; 1,060-gallon dosing or holding tank)
- Infiltrator TW-1050 (1,050-gallon effective capacity septic tank; 1,217-gallon dosing or holding tank)
- Infiltrator TW-1250 (1,250-gallon effective capacity septic tank; 1,452-gallon dosing or holding tank)
- Infiltrator TW-1500 (1,500-gallon effective capacity septic tank; 1,766-gallon dosing or holding tank)

Only the length is changed between the TW-900 through TW-1500 to offer a different capacity for the product. Other dimensions remain constant.

Information supporting this review and approval request is provided below and in the attachments to this letter.

Compliance with Dimensional and Feature Requirements

The Maine Subsurface Wastewater Disposal Rules, 10-144 CMR 241-9 set forth a number of minimum dimensional and configuration-related requirements that must be satisfied for use of tanks in Maine. Infiltrator's product design complies with these requirements or is consistent with other plastic septic tank product designs that have been previously approved for use by the Department of Health and Human Services. A side-by-side comparison of the applicable regulatory requirements and Infiltrator product dimensions and configuration is provided in Attachment 1. Attached tables are as follows:

- Table 1 – Comparison of Septic Tank Design to Maine 10-144 CMR 241 Rule Requirements, Infiltrator TW-900 through TW-1500 Septic Tank Models
- Table 2 - Comparison of Pump Tank Design to Maine 10-144 CMR 241 Rule Requirements, Infiltrator TW-375 Pump Tank

Detailed design drawings of the septic and pump tanks are provided in Attachment 2. Attached illustrations are as follows:

- Drawing 1 – Infiltrator TW-Series Septic Tank Configuration (1 and 2 compartments)
- Drawing 2 – Infiltrator TW-375 Dimensions

Attachment 3 provides a comparative illustration of the tank series, as well as photographs of the manufactured product and a marketing brochure.

Section 905.1.2 requires an additional inspection opening above the tank inlet and outlet connections. This is in addition to the tank opening required for each compartment. The TW-series tank provides two openings, each 24 inches in diameter, positioned above the inlet and outlet tees. This configuration mirrors that of the Fralo Plastech tank, which was previously approved for use in Maine by the Department of Human Services (October 27, 2003 letter is provided in Attachment 4). Given that Infiltrator's opening arrangement matches the configuration of the Fralo Plastech product, and the Fralo Plastech product is approved for use, we request that the requirement for an additional inspection opening be waived for the TW-series tank.

In consideration of the information presented in the above-referenced tables and figures and comparison of the Infiltrator tank design to other tanks accepted for use in Maine, Infiltrator requests acceptance of its product on the combined merits of regulatory compliance and substantial equivalency to other similar Department-approved products.

Materials and Performance Evaluation for IAPMO/ANSI Z1000-2007

Infiltrator's request for certification of the TW-series tank by the International Association of Plumbing and Mechanical Officials (IAPMO) is currently in progress. As part of the IAPMO certification process, Infiltrator has procured the services of CRT Laboratories, Inc. (CRT), which is an IAPMO-certified laboratory. CRT's role in the certification process is to conduct testing on materials used in manufacture, and provide independent third-party verification of testing on the TW-series tank. CRT reports the results of this work directly to IAPMO. CRT has prepared its third-party report on materials and performance testing verification for the TW-series tanks, and submitted the information to IAPMO. This report is provided in Attachment 5.

In summary, the CRT report states that the TW-series tank is compliant with IAPMO/ANSI Z1000-2007 requirements. Testing conducted or third-party verified by CRT includes evaluation of polyethylene resin, watertightness, and design features. This evaluation included laboratory and field testing of the TW-series design, as well as an evaluation of the design by a licensed professional engineer.

Riser Compatibility

The TW-series tanks are compatible with Polylok risers, as well as 24-inch-diameter pipe. Infiltrator does not manufacture a riser for its tank product.

Review and Approval Request

The information provided in this letter demonstrates that Infiltrator's series generally meets Maine's technical requirements for tanks. In addition, Infiltrator's product design is consistent with the product design of other manufacturers that have gained acceptance for use of low-profile polyethylene tanks in Maine. This tank series is capable of providing equivalent performance to other polyethylene tank designs accepted for use in Maine by the Department of Human Services. Infiltrator requests acceptance of its tank product series under Maine Subsurface Wastewater Disposal Rules, 10-144 CMR 241-9. A draft suggested acceptance document has been provided in Attachment 6.

Thank you very much for your review of this request. Please contact me at (860) 577-7198 if any further information is required.

Sincerely,

David Lentz

David Lentz, P.E.
Senior Engineer
Science & Government Affairs

cc: Carl Thompson, P.E., Infiltrator Systems Inc.

Attachment 1

Comparison of Product Design with State Regulations

Table 1
Infiltrator Systems Inc. Septic Tank
Request for Approval
Comparison of Septic Tank Design to Maine 10-144 CMR 241 Rule Requirements
Infiltrator TW-900 through TW-1500 Septic Tank Models

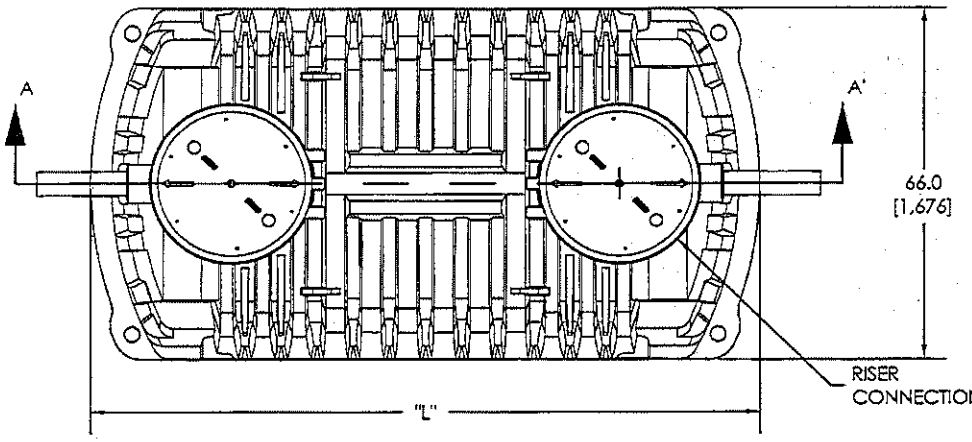
Parameter	Units	ME 10-144 CMR 241 Rule Requirement	Infiltrator Septic Tank Model				ME 10-144 CMR 241 Rule Reference
			TW-900	TW-1050	TW-1250	TW-1500	
Liquid depth	inch	≥30	39.75	39.75	39.75	39.75	903.1
Air space height	inch	Pipe tee diameter + 1 inch	10.0	10.0	10.0	10.0	903.2
Height	inch	None	50.7	50.7	50.7	50.7	—
Width	inch	None	66.0	66.0	66.0	66.0	—
Inside length	inch	≥74	96.6	109.9	129.9	156.6	903.4
Liquid capacity	gallon	≥750	914	1,049	1,250	1,519	906.3
Elevation drop between inlet and outlet invert	inch	≥2	2.25	2.25	2.25	2.25	904.3
Manhole access opening	inch	≥18	24.0	24.0	24.0	24.0	905.1.1

Table 2
Infiltrator Systems Inc. Dosing Tanks
Request for Approval
Comparison of Dosing Tank Design to Maine 10-144 CMR 241 Rule Requirements
Infiltrator TW-375 Dosing Tanks

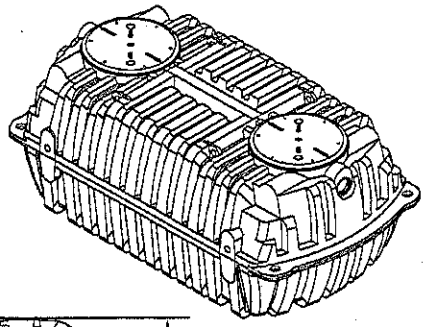
Parameter	Units	ME 10-144 CMR 241 Requirement	Infiltrator Dosing Tank TW-375
Invert height	inch	None	40.0
Height	inch	None	49.2
Width	inch	None	59.6
Length	inch	None	59.6
Effective (total) capacity	gallon	None	385
Manhole access opening	inch	≥18	24.0

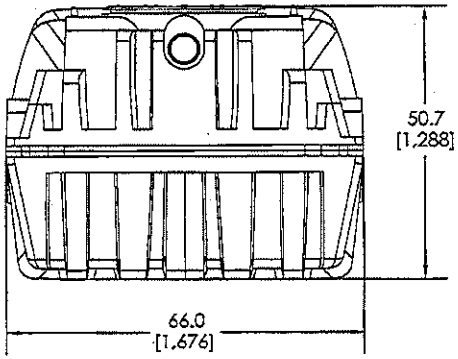
Attachment 2

Detailed Design Drawings

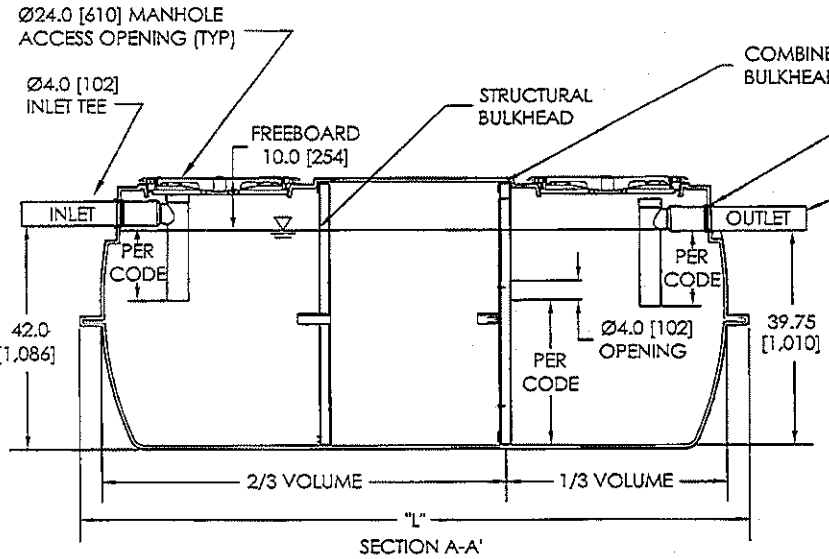


TOP VIEW





SIDE VIEW



SECTION A-A'

PARAMETER	UNITS U.S.[Metric]	INFILTRATOR SEPTIC TANK MODEL			
		TW-900	TW-1050	TW-1250	TW-1500
TOTAL VOLUME	gal [L]	1,060 [4,011]	1,217 [4,606]	1,452 [5,496]	1,766 [6,684]
WORKING VOLUME	gal [L]	914 [3,460]	1,049 [3,971]	1,250 [4,732]	1,519 [5,750]
TANK LENGTH ("L")	in [mm]	110.4 [2,803]	123.7 [3,142]	143.7 [3,650]	170.1 [4,320]
TANK WIDTH	in [mm]	66.0 [1,676]	66.0 [1,676]	66.0 [1,676]	66.0 [1,676]
TANK HEIGHT	in [mm]	50.7 [1,288]	50.7 [1,288]	50.7 [1,288]	50.7 [1,288]
LIQUID LEVEL	in [mm]	39.75 [1,010]	39.75 [1,010]	39.75 [1,010]	39.75 [1,010]
FREEBOARD	in [mm]	10.0 [254]	10.0 [254]	10.0 [254]	10.0 [254]
INVERT DROP	in [mm]	2.25 [57]	2.25 [57]	2.25 [57]	2.25 [57]

GENERAL NOTES:

1. Typical cross section shown is for an Infiltrator TW-1050 gallon septic tank .
2. Number of structural bulkheads and locations will vary based on tank capacity
3. Local requirements may include additional baffle penetrations.
4. Tank markings will include: manufacturer name, liquid capacity, manufacture date, maximum burial depth, model number, inlet, and outlet.
5. Exterior of manhole cover includes the following warning: "DANGER DO NOT ENTER: POISON GASES" written in English, French and Spanish.
6. Maximum burial depth is 48 in [1,219 mm].
7. Dimensions on drawing show in inches [millimeters].

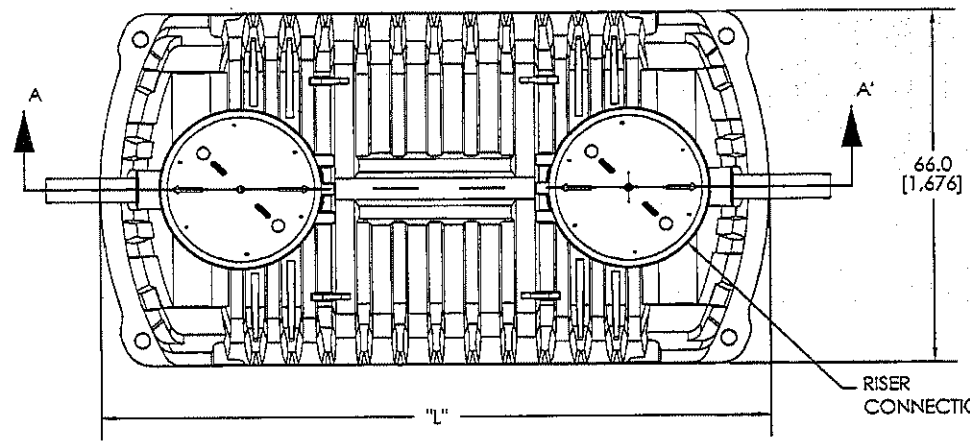
INFILTRATOR septic tanks

INFILTRATOR SYSTEMS INC.
6 Business Park Rd. Old Saybrook, CT 06475
(800)-221-4436

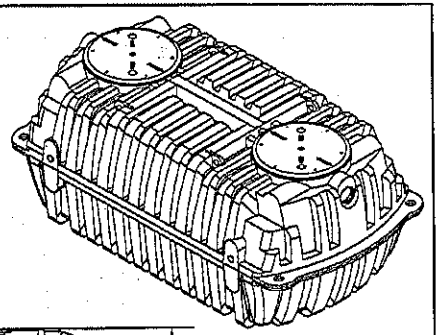
TW-SERIES
SEPTIC TANK CONFIGURATION

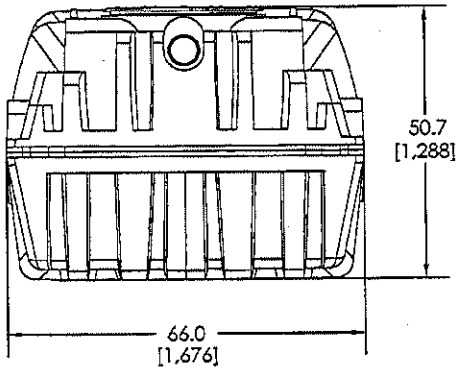
Drawn by: R.D.	DWG NO. 1	Date: 7-2-08
SCALE Not to Scale	Checked by: EPK	SHEET 1 of 1

Q:\TECH RES NEW\PRODUCTS\TANK\Tank42 Inlet, 39.75 Outlet, 2 Compartment.DWG

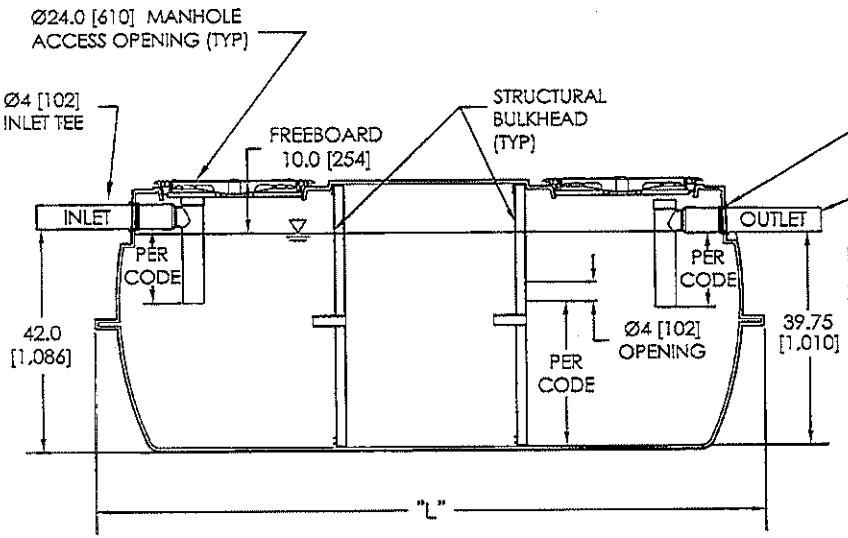


TOP VIEW





SIDE VIEW



SECTION A-A'

PARAMETER	UNITS U.S.[Metric]	INFILTRATOR SEPTIC TANK MODEL			
		TW-900	TW-1050	TW-1250	TW-1500
TOTAL VOLUME	gal [L]	1,060 [4,011]	1,217 [4,606]	1,452 [5,496]	1,766 [6,684]
WORKING VOLUME	gal [L]	914 [3,460]	1,049 [3,971]	1,250 [4,732]	1,519 [5,750]
TANK LENGTH ("L")	in [mm]	110.4 [2,803]	123.7 [3,142]	143.7 [3,650]	170.1 [4,320]
TANK WIDTH	in [mm]	66.0 [1,676]	66.0 [1,676]	66.0 [1,676]	66.0 [1,676]
TANK HEIGHT	in [mm]	50.7 [1,288]	50.7 [1,288]	50.7 [1,288]	50.7 [1,288]
LIQUID LEVEL	in [mm]	39.75 [1,010]	39.75 [1,010]	39.75 [1,010]	39.75 [1,010]
FREEBOARD	in [mm]	10.0 [254]	10.0 [254]	10.0 [254]	10.0 [254]
INVERT DROP	in [mm]	2.25 [57]	2.25 [57]	2.25 [57]	2.25 [57]

GENERAL NOTES:

1. Typical cross section shown is for an Infiltrator TW-1050 gallon septic tank .
2. Number of structural bulkheads and locations will vary based on tank capacity
3. Local requirements may include additional baffle penetrations.
4. Tank markings will include: manufacturer name, liquid capacity, manufacture date, maximum burial depth, model number, inlet, and outlet.
5. Exterior of manhole cover includes the following warning: "DANGER DO NOT ENTER: POISON GASES" written in English, French and Spanish.
6. Maximum burial depth is 48 in [1,219 mm].
7. Dimensions on drawing show in inches [millimeters].

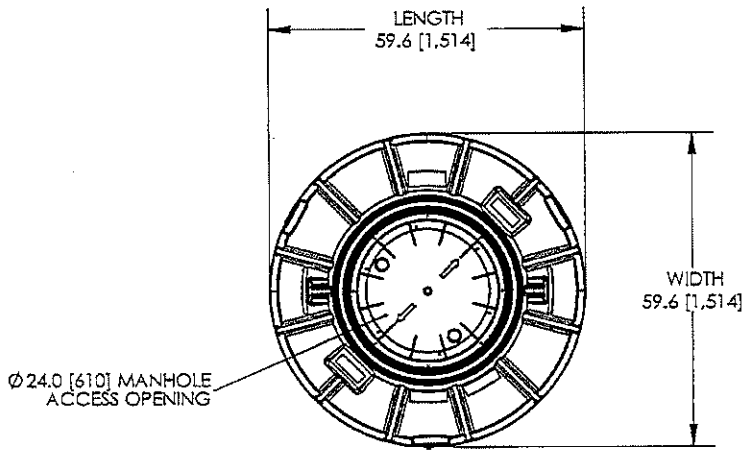
INFILTRATOR septic tanks

INFILTRATOR SYSTEMS INC.
6 Business Park Rd. Old Saybrook, CT 06475
(800)-221-4436

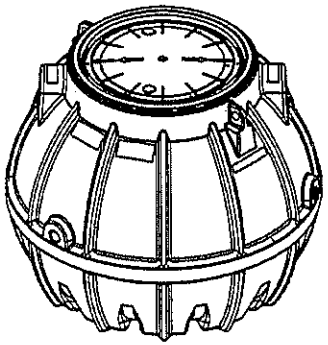
TW-SERIES
SEPTIC TANK CONFIGURATION

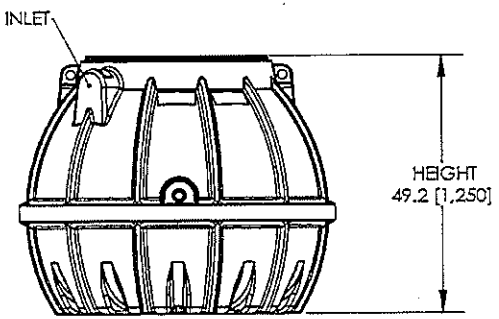
Drawn by: R.D.	DWG NO. 1	Date: 7-2-08
SCALE Not to Scale	Checked by: EPK	SHEET 1 of 1

Q:TECH RES NEW/PRODUCTS/TANK/Tank42 Inlet, 39.75 Outlet, 1 Compartment.DWG



PLAN





PROFILE

PARAMETER	UNITS U.S. [METRIC]	VALUE
INVERT HEIGHT	in [mm]	40.0 [1,016]
EFFECTIVE (TOTAL) CAPACITY	gal [L]	385 [1,457]
MANHOLE AREA	in^2 [m^2]	432 [0.28]

1. TANK MARKINGS WILL INCLUDE: MANUFACTURER NAME, LIQUID CAPACITY, MANUFACTURE DATE, MAXIMUM BURIAL DEPTH, AND SERIAL NUMBER.
2. EXTERIOR OF MANHOLE COVER INCLUDES THE FOLLOWING WARNING: "DANGER DO NOT ENTER POISON GASES" WRITTEN IN ENGLISH, FRENCH, AND SPANISH.
3. MAXIMUM BURIAL DEPTH IS 48 IN [1,219 MM].
4. DIMENSIONS ON DRAWING SHOWN IN INCHES [MILLIMETERS].

END APPROVAL: R. CHRISTIE | DATE: 05-21-08

INFILTRATOR SYSTEMS INC.
6 Business Park Rd. Old Saybrook, CT 06475
800-221-4436

TITLE: TW-375 PUMP TANK DIMENSIONS

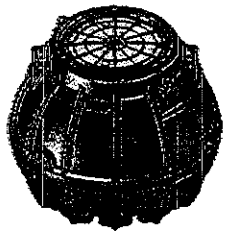
SIZE: A | DWG NO: 2 | DWG REV: A
SCALE: NTS | CAD: SOLIDWORKS | WEIGHT: | SHEET 1 OF 1

REG_375 PUMP TANK, 40 INVERT, 05-21-08

5 4 3 2 1

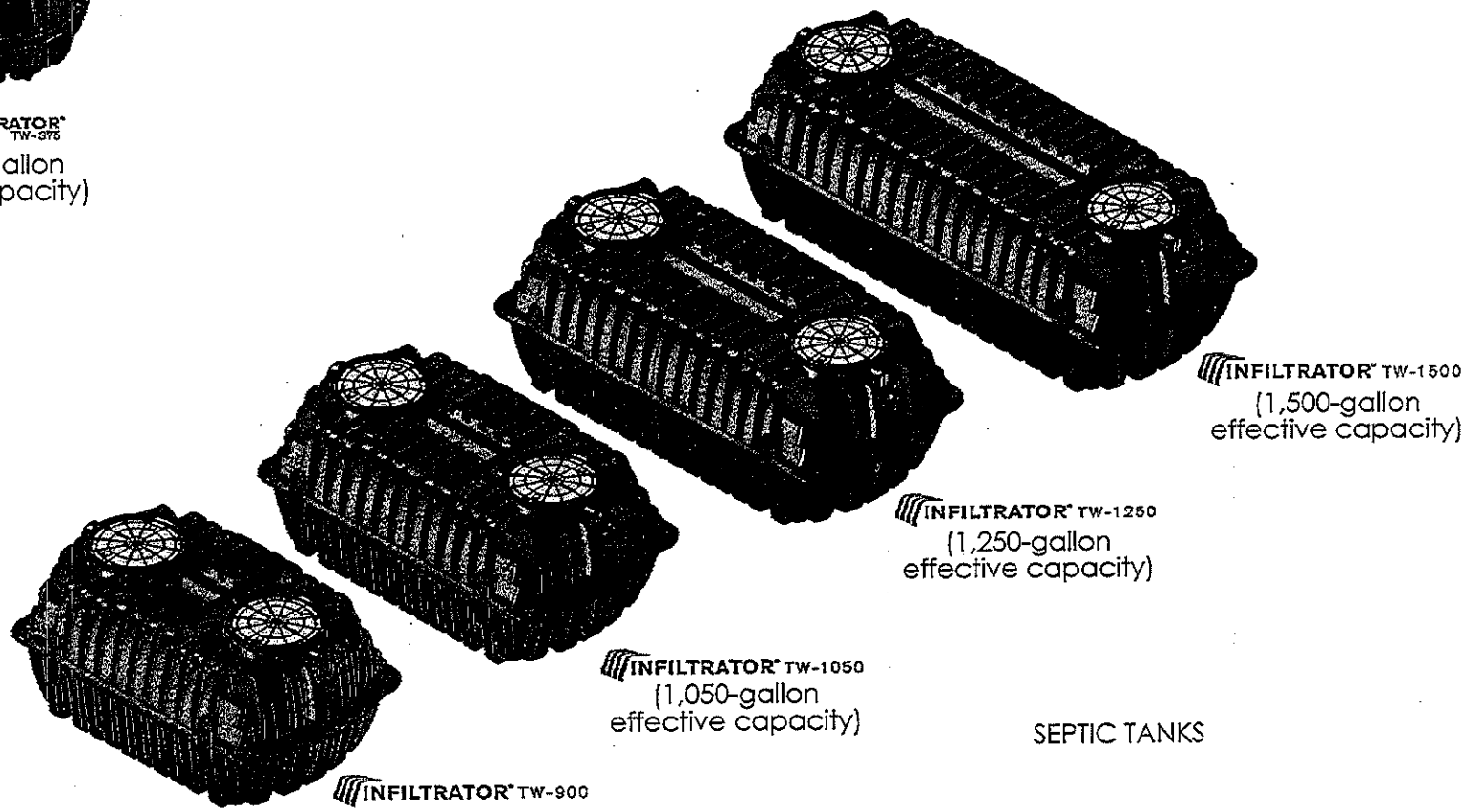
Attachment 3

Comparative Illustration, Photographs, and Brochure



PUMP TANK

INFILTRATOR® TW-375
(375-gallon
total capacity)



INFILTRATOR® TW-1500
(1,500-gallon
effective capacity)

INFILTRATOR® TW-1250
(1,250-gallon
effective capacity)

INFILTRATOR® TW-1050
(1,050-gallon
effective capacity)

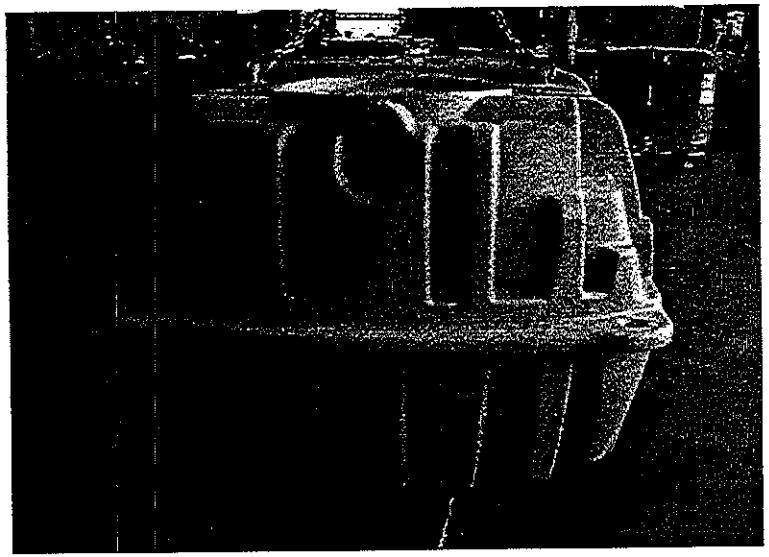
INFILTRATOR® TW-900
(900-gallon
effective capacity)

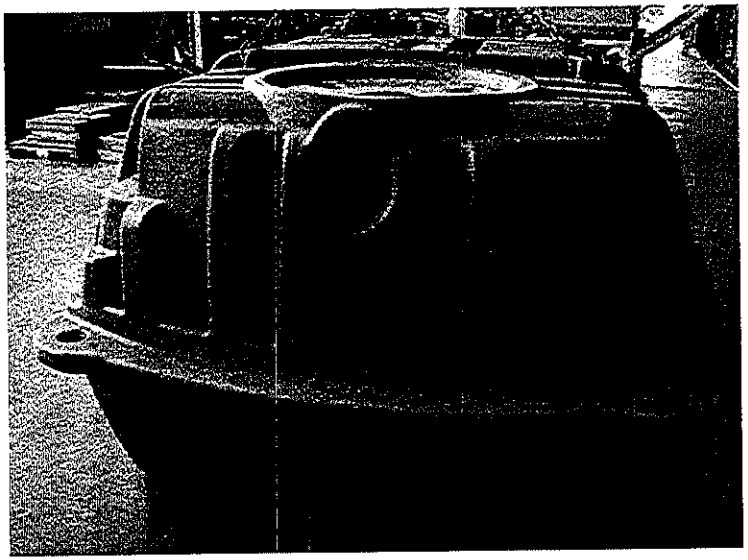
SEPTIC TANKS

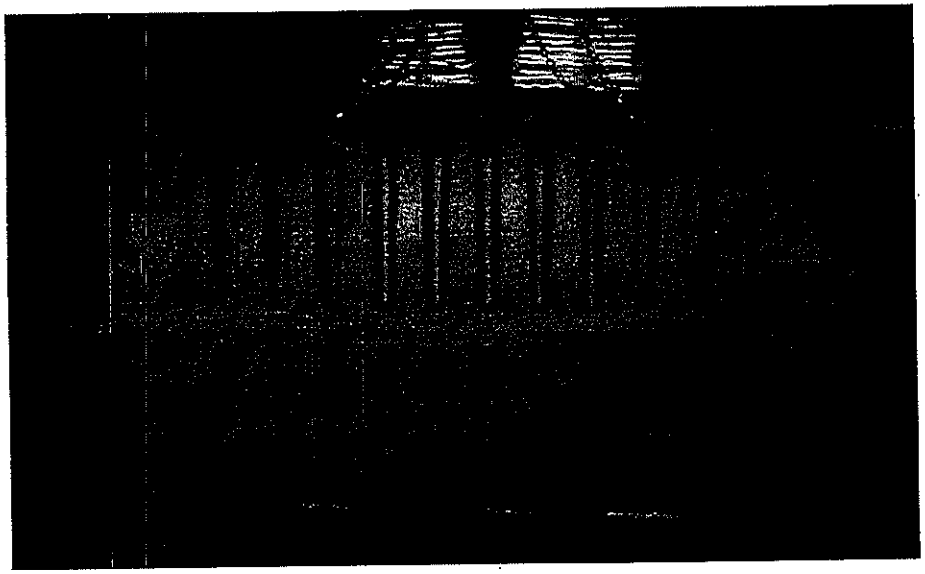
5tanks_wlids_061308.pdf 6-13-08

INFILTRATOR SYSTEMS INC.			
INFILTRATOR® septic tanks — 6 Business Park Rd Old Saybrook, CT 06475 800-221-4436			
TITLE: TW-SERIES TANKS			
ENG APPROVAL: C. CARDILLO	DATE: 6-13-08	SIZE: A	DWG NO: 1
		SCALE: NTS	CAD: SOLIDWORKS
		WEIGHT:	SHEET: 1 OF 1
			DWG REV: A

5 4 3 2 1







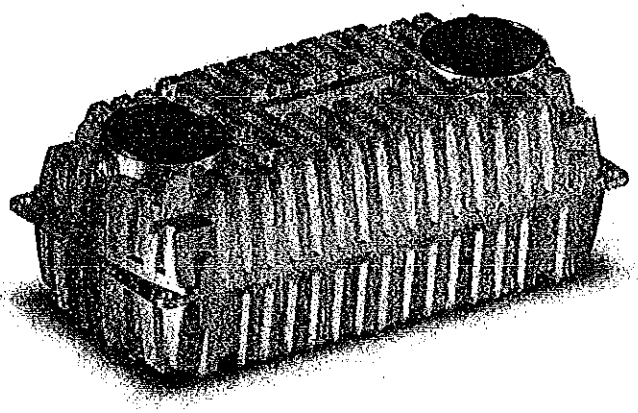
INFILTRATOR SYSTEMS INC.

6 Business Park Road Old Saybrook, CT 06475
1-800-221-4436

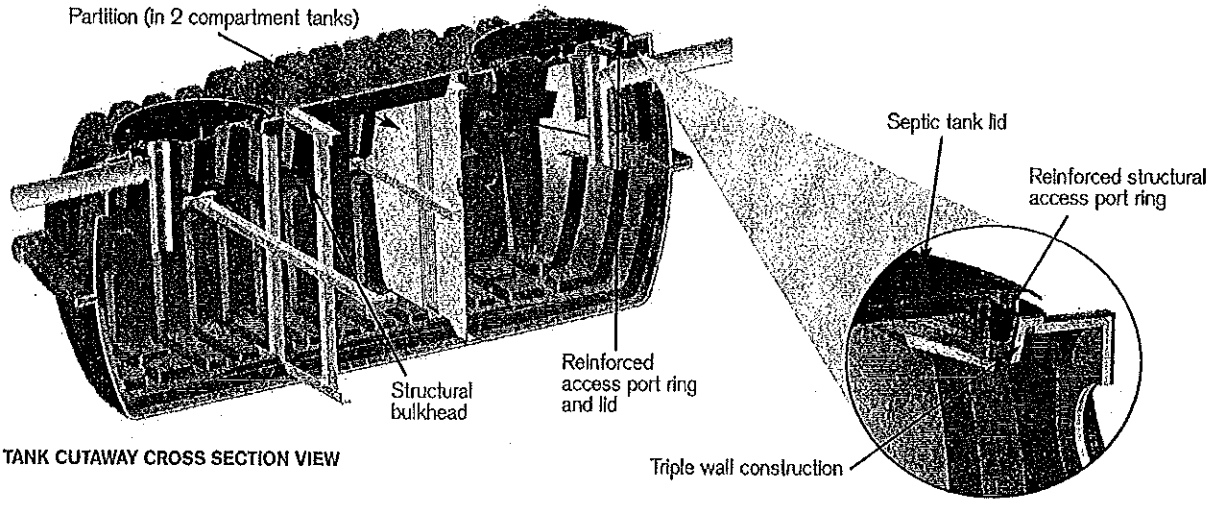
INFILTRATOR®
TW-1050

INFILTRATOR®
septic tanks

TW-SERIES SEPTIC TANKS



Infiltrator Systems TW-Series Septic Tanks provide superior strength for long-term, water-tight performance. Innovative features not found in any other septic tank include: thick, triple wall design manufactured with proprietary state-of-the-art rotomolding technology; permanent, factory-installed structural bulkheads; and reinforced access ports. No special installation, backfill or water filling procedures are required. The TW-Series Septic Tanks come in five different sizes.



TANK CUTAWAY CROSS SECTION VIEW

LID CUTAWAY CROSS SECTION VIEW

TW-Series Septic Tanks Offer These Unique Benefits:

- Triple wall design provides a thick composite wall structure that acts like a structural I-beam
- Factory installed bulkheads offer superior structural stability under heavy loads
- Reinforced access ports do not distort upon backfilling or during pump-outs
- Can be installed without water filling, special soil bedding or backfilling procedures
- Can be pumped dry during pump-outs (no need to refill with water)
- Resistant to flotation in high water table conditions
- Can be installed with 6 to 48 inches of soil cover
- Available as single or dual compartment tanks
- Suitable for use as septic tanks and pump tanks
- Flat bottoms allow for easy storage and installation

Attachment 4

October 27, 2003 Approval Letter

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

JOHN ELIAS BALDACCI
GOVERNOR

October 27, 2003

FRALO Plastech
Attn.: Mark Jones, PE
One General Motors Drive
Syracuse, NY 13206

Subject: Product Registration, FRALO Plastech Plastic Septic Tanks

Dear Mr. Jones:

The Division of Health Engineering has reviewed your application for registration of your product for use in Maine. This information was submitted pursuant to Section 1802 of the Maine State Plumbing Code, Subsurface Wastewater Disposal Rules (Rules).

Product Description

The FRALO Plastech Plastic Septic Tanks consist of models # ST-750, ST-1060, ST-1250, and ST-1500. In each instance, the model number corresponds with the tank capacity in gallons. The FRALO Plastech Plastic Septic Tanks are designed for use with conventional onsite sewage disposal areas.

Claim

According to the information you provided, the FRALO Plastech Plastic Septic Tanks meet or exceed relevant ASTM, IAPMO, and CAN/CSA standards.

Determination

On the basis of the information submitted, the Division has determined that FRALO Plastech Plastic Septic Tanks are acceptable for use in the State of Maine on a General Approval basis, provided that they are installed, operated, and maintained in conformance with the manufacturer's directions.

In the event that the product fails to perform as claimed by the applicant, use of FRALO Plastech Plastic Septic Tanks in Maine, including all installations approved pursuant to Section 1801.7 of the Rules, shall cease. Use of FRALO Plastech Plastic Septic Tanks shall not resume until the applicant and the Division have reached a mutually acceptable agreement for resolving the failure to perform as claimed.

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 FRALO Plastech Plastic Septic Tanks. 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, Environmental Specialist IV
Wastewater and Plumbing Control Program
Division of Health Engineering
e-mail: james.jacobsen@state.me.us

/jaj

xc: Product File

Attachment 5

Third-Party Testing Report

ISO 9001:2000

CRT LABORATORIES, INC.
1680 North Main Street, Orange, CA 92867
(714) 283-2032 • (800) 597-LABS (5227) • Fax (714) 283-1365
www.crtlabs.com • e-mail: crtlabs@pacbell.net
ASTM Physical & Mechanical • Chemical-Thermal Analysis • IAPMO Cell Class
Geosynthetic Materials • Plumbing & Faucet Assemblies • Resin & Finished Product Testing

TEST REPORT

FOR: Infiltrator Systems, Inc.
6 Business Park Road, P.O. Box 768
Old Saybrook, CT 06475
Tel: (860) 577-7106 / Fax: (860) n/a
ATTN: Mr. Carl W. Thompson, P.E.

LWR NO.: 17606-Final DATE: June 26, 2008

BACKGROUND: The customer submitted one (1) sample of HDPE for testing to IAPMO/ANSI Z 1000-07. The resin arrived on 05/19/2008 via customer-supplied courier. Visual inspection was performed on 05/19/2008 and no product defects were noted. Sample packaged and sent from the above address. The sample was sealed upon receipt and no evidence of tampering was noted. Resin sample submitted for cell class testing to IAPMO/ANSI Z1000-07, section 4.3.1. Tank testing shall be in accordance with section 5.1.1. All testing and sample preparation performed by CRT personnel, with no outside services required. However, tank testing was performed by video. Testing in accordance with IAPMO inspection letter received on 05/19/2008. The following additional information is provided:

CRT order entry log date: 05/19/2008 / **Report due date:** 06/24/2008

Product ID:
1) Chevron HDPE resin, labeled RD 1061 (Orange)
2) HDPE TW375, TW900, TW1050, TW1250 & TW1500 Gallon tanks

IAPMO File #: to be assigned **Listee:** Infiltrator Systems

Testing: Cell class testing to IAPMO/ANSI Z1000-07, section 4.3.1. In addition, tank testing shall be in accordance with IAPMO/ANSI Z1000-07, section 5.1.1.

PREPARATION: **Compression Molding** – ASTM D 4703, Procedure - C
Machining and Preparation – applicable ASTM methods
Conditioning – ASTM D 618, 40 hours in a standard laboratory environment

TEST PROCEDURES: **Density (g/cm³)** – ASTM D 792, method-B
Melt Flow Rate (g/10min) – ASTM D 1238, Cond.-E (190°C / 2.16Kg)
Tensile Strength @ Yield and Elongation % – ASTM D 638
Flexural Modulus (Psi / MPa) – ASTM D 790
Ash Content (in-organic filler, class-B), min 0.1% – CRT (nitrogen)
Environmental Stress – ASTM D 1693, as instructed by IAPMO/ANSI Z 1000
Calorimetry Thermal Analysis (3-minimum induction points) – ASTM D 3418 (Nitrogen, N_2)
Infrared Microspectroscopy (IR) – CRT methods (fingerprint resin)
Water Tightness – section 5.1.1 (see attached video)

TEST RESULTS: The results of testing reported in the attached data tables.

CONCLUSION: The Chevron RD1061 HDPE is compliant with section 4.3.1 of IAPMO/ANSI Z1000-07...**Complies.** HDPE tank information (including leak test video) is attached for reference. In addition, installation instructions, original CADS drawings and registered PE statement(s) are attached to this package for IAPMO review and approval. Based on all information submitted by the client, along with CRT test report, the Chevron RD 1061 and related tanks are recommended for IAPMO listing.

ISO 9001:2000

CRT LABORATORIES, INC.
1680 North Main Street, Orange, CA 92867
(714) 283-2032 • (800) 597-LABS (5227) • Fax (714) 283-1365
www.crtlabs.com • e-mail: crtlabs@pacbell.net
ASTM Physical & Mechanical • Chemical-Thermal Analysis • IAPMO Cell Class
Geosynthetic Materials • Plumbing & Faucet Assemblies • Resin & Finished Product Testing

FOR: Infiltrator Systems, Inc.
6 Business Park Road, P.O. Box 768
Old Saybrook, CT 06475
Tel: (860) 577-7106 / Fax: (860) n/a
ATTN: Mr. Carl W. Thompson, P.E.

LWR NO.: 17606-Final DATE: June 26, 2008

TABLE 1
SCOPE: Compliance with IAPMO/ANSI Z1000-07
IAPMO File: to be assigned

FINAL RESULTS

Test Property	Chevron RD1061 (Outer Shell)	IAPMO Requirements
Peak Tensile strength (Psi / MPa)	Pass 4,261 / 29.4	2400 Psi, IAPMO/ANSI Z1000
Melt Flow Rate (g/10 min)	Pass Category 3 3.2	Category 3, IAPMO/ANSI Z1000
Density in Methanol (g/cm^3)	Pass Type-III 0.944	Type-III, IAPMO/ANSI Z1000
Flexural Modulus (Psi / MPa)	Pass 95,761 / 660	85,000 Psi, IAPMO/ANSI Z1000
Color Content (%)	Pass Class-B 0.11%	Classes B & C, IAPMO/ANSI Z1000 0.1% min
E.S.C.R. (Igepal CO-630)	Pass 150hrs @ 100°C	150hrs @ 100°C, IAPMO/ANSI Z1000
Thermal Analysis (DSC) (material ID)	HDPE, Pass 130.7°C	HDPE, ASTM / IAPMO/ANSI Z1000
Infrared Microspectroscopy (IR) (material ID)	Pass HDPE	HDPE, ASTM / IAPMO/ANSI 1000

Specimen Retain: BB (30-day retain only unless otherwise specified)

CRT LABORATORIES, INC.
UL Approved-Registered / ISO 9001:2000 – ISO-IEC 17025:2005 Compliant

Ken A. Le Jeune
COO / Laboratory Director

Jeffrey A. Blackford
Senior Laboratory Manager

ISO 9001:2000

CRT LABORATORIES, INC.
1680 North Main Street, Orange, CA 92867
(714) 283-2032 • (800) 597-LABS (5227) • Fax (714) 283-1365
www.crtlabs.com • e-mail: crtlabs@pacbell.net
ASTM Physical & Mechanical • Chemical-Thermal Analysis • IAPMO Cell Class
Geosynthetic Materials • Plumbing & Faucet Assemblies • Resin & Finished Product Testing

FOR: Infiltrator Systems, Inc.
6 Business Park Road, P.O. Box 768
Old Saybrook, CT 06475
Tel: (860) 577-7106 / Fax: (860) n/a
ATTN: Mr. Carl W. Thompson, P.E.

LWR NO.: 17606-Final DATE: June 26, 2008

TABLE 2
SCOPE: IAPMO/ANSI Z1000-07
IAPMO File: to be assigned

Infiltrator Hi-density Polyethylene (HDPE) Tanks:

1) HDPE Tank TW375
2) HDPE Tank TW900
3) HDPE Tank TW1050
4) HDPE Tank TW1250
5) HDPE Tank TW1500

TEST RESULTS: Water tightness testing was conducted at the client's plant division in Italy. Water test was conducted in accordance with section 5.1.1 of IAPMO/ANSI Z 1000-07 via video then submitted to CRT for examination.

PROCEDURE: Seal the tank, fill with water raised to the flow-line of the outlet fitting, and let stand for a minimum of 1 hour. There shall be no visible leakage. Concrete tanks shall not be rejected for damp spots due to condensation on the exterior surface. Upon receipt and examination of the video, it appears that no leakage was observed (see video attached to this package)…**Complies**

DISCUSSION: Page 4 displays information from a registered P.E. regarding design features. Upon review of these documents it appears statements made comply with IAPMO requirements for design. Pages 5 and 6 display CAD designs of tanks, which comply with the requirements of IAPMO.

CRT LABORATORIES, INC.
1680 North Main Street, Orange, CA 92867
(714) 283-2032 • (800) 597-LABS (5227) • Fax (714) 283-1365
www.crtlabs.com • e-mail: crtlabs@pacbell.net
ASTM Physical & Mechanical • Chemical-Thermal Analysis • IAPMO Cell Class
Geosynthetic Materials • Plumbing & Faucet Assemblies • Resin & Finished Product Testing

FOR: Infiltrator Systems, Inc.
6 Business Park Road, P.O. Box 768
Old Saybrook, CT 06475
Tel: (860) 577-7106 / Fax: (860) n/a
ATTN: Mr. Carl W. Thompson, P.E.

LWR NO.: 17606-Final DATE: June 26, 2008

GNCB
Gibble Norden Champion Brown
Consulting Engineers, Inc.

June 23, 2008

To: Research and Development
Infiltrator Systems Incorporated (ISI)

Re: Structural Evaluation of Polyethylene Septic Tank
Models TW-375, TW-900, TW-1050, TW-1250 and TW-1500
Per IAPMO/ANSI Z1000-2007 Standard

I have reviewed the information provided regarding the IAMPO compliance for the above buried septic tank product. This information has included:

- Material property test results for component materials.
- Vacuum loading test results from the prototype,
- Finite Element Analysis (FEA) results correlated to the physical modeling,
- ISI's IAMPO/ANSI Z1000-2007 Compliance Presentation.

The FEA modeling has addressed the structural loading requirements of IAMPO sections 3.6, 3.6.1, 3.7 and 3.7.2 for burial and operation in areas not subject to traffic loadings. In all load cases material stresses are within acceptable limits without undue deformation.

It is my opinion that the model TW-1250 meets the structural requirements of the IAMPO standard. Furthermore, the ISI tank models TW-900,TW-1050 and TW-1500, which are all geometrically identical to the evaluated TW-1250 model except for length, will meet the same loading requirements as the 1250 model, which has the highest stresses due to the largest internal bulkhead spacing. The TW-375 pump tank model is more geometrically stable (spherical) and will exceed the load carrying capacities of the longitudinal tanks as well.

Sealed engineering drawings certifying prefabricated septic tanks capacity and structural design per requirements of section 3.1 of the IAMPO standard are attached.

Sincerely yours,

Charles C. Brown, PE

STATE OF CONNECTICUT
CHARLES C. BROWN
No. 14390
LICENSED
PROFESSIONAL ENGINEER

Principals -
Kenneth Gibble, P.E.
James F. Norden, P.E.
Laura E. Champion, P.E.
Charles C. Brown, P.E.
Associate
Douglas C. Alderson, P.E.
Geotechnical Associate
David L. Freed, P.E.

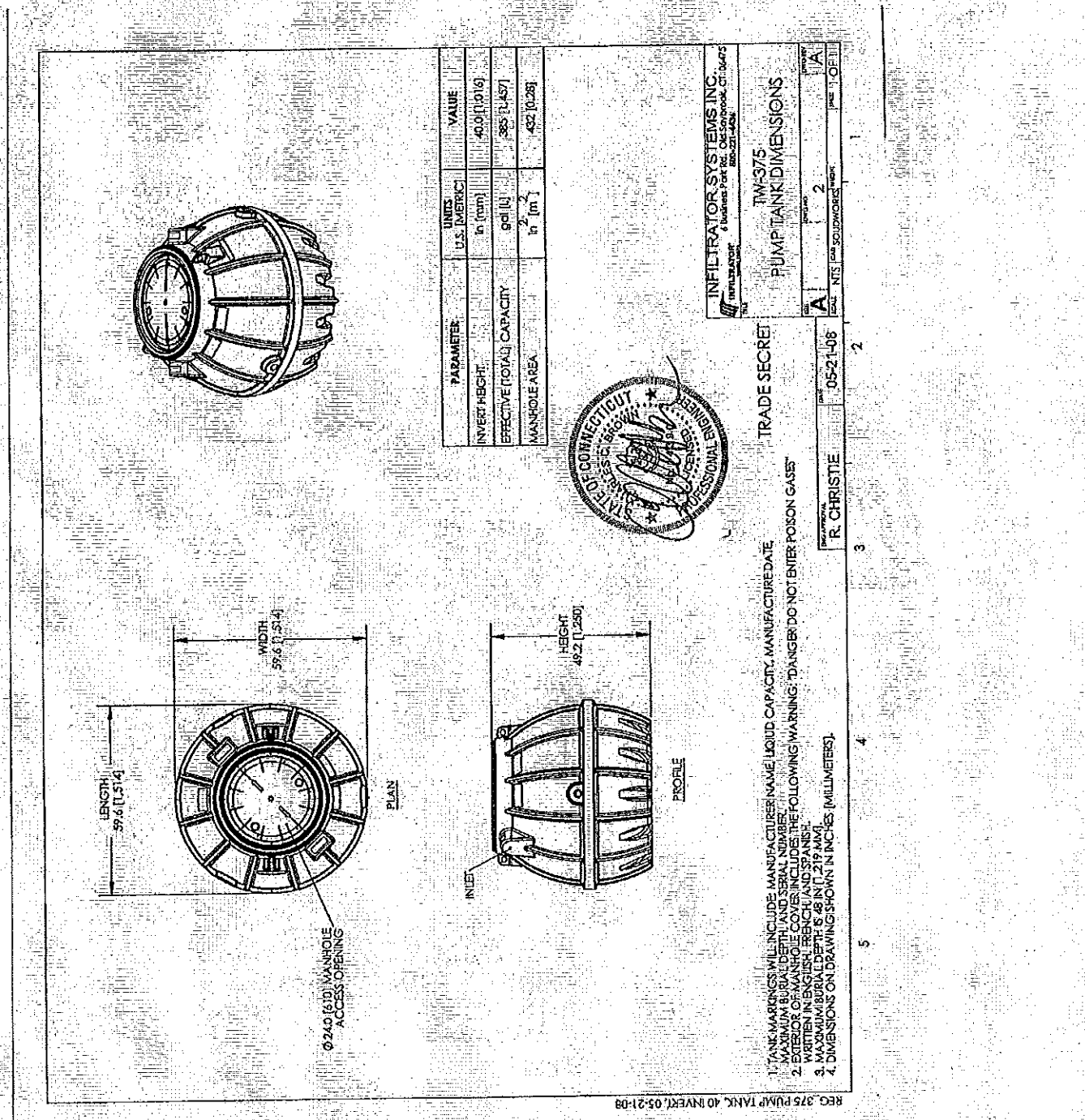
130 Elm Street
P.O. Box 902
Old Saybrook, CT 06475
Tel 860.388.1224
Fax 860.388.4613
jbrown@gncbengineers.com
gncbengineers.com

ISO 9001:2000

CRT LABORATORIES, INC.
1680 North Main Street, Orange, CA 92867
(714) 283-2032 • (800) 597-LABS (5227) • Fax (714) 283-1365
www.crtlabs.com • e-mail: crtlabs@pacbell.net
ASTM Physical & Mechanical • Chemical-Thermal Analysis • IAPMO Cell Class
Geosynthetic Materials • Plumbing & Faucet Assemblies • Resin & Finished Product Testing

FOR: Infiltrator Systems, Inc.
6 Business Park Road, P.O. Box 768
Old Saybrook, CT 06475
Tel: (860) 577-7106 / Fax: (860) n/a
ATTN: Mr. Carl W. Thompson, P.E.

LWR NO.: 17606-Final DATE: June 26, 2008



ISO 9001:2000

Committed to Quality

CRT LABORATORIES, INC.

1680 North Main Street, Orange, CA 92867

(714) 283-2032 • (800) 597-LABS (5227) • Fax (714) 283-1365

www.crtlabs.com • e-mail: crtlabs@pacbell.net

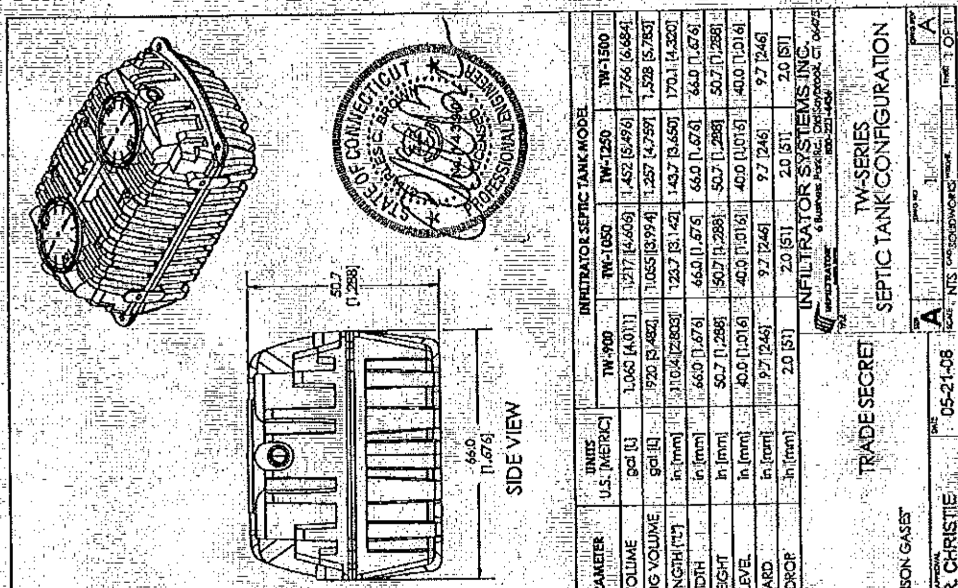
ASTM Physical & Mechanical • Chemical-Thermal Analysis • IAPMO Cell Class

Geosynthetic Materials • Plumbing & Faucet Assemblies • Resin & Finished Product Testing

TEST REPORT

FOR: Infiltrator Systems, Inc.
6 Business Park Road, P.O. Box 768
Old Saybrook, CT 06475
Tel: (860) 577-7106 / Fax: (860) n/a
ATTN: Mr. Carl W. Thompson, P.E.

LWR NO.: 17606-Final DATE: June 26, 2008



PARAMETER	UNITS U.S. [METRIC]	INFILTRATOR SEPTIC TANK MODEL TW-900	TW-1050	TW-1250	TW-1500
TOTAL VOLUME	gal [L]	1,060 [4,011]	1,217 [4,606]	1,452 [5,496]	1,766 [6,684]
WORKING VOLUME	gal [L]	920 [3,482]	1,055 [3,994]	1,257 [4,759]	1,528 [5,783]
TANK LENGTH ("L")	in [mm]	110.4 [2,803]	123.7 [3,142]	143.7 [3,650]	170.1 [4,320]
TANK WIDTH	in [mm]	66.0 [1,676]	66.0 [1,676]	66.0 [1,676]	66.0 [1,676]
TANK HEIGHT	in [mm]	50.7 [1,288]	50.7 [1,288]	50.7 [1,288]	50.7 [1,288]
LIQUID LEVEL	in [mm]	40.0 [1,016]	40.0 [1,016]	40.0 [1,016]	40.0 [1,016]
FREEBOARD	in [mm]	9.7 [246]	9.7 [246]	9.7 [246]	9.7 [246]
INVERT DROP	in [mm]	2.0 [51]	2.0 [51]	2.0 [51]	2.0 [51]

Attachment 6

Draft Suggested Approval Language

DRAFT

MAINE DEPARTMENT OF HUMAN SERVICES

David Lentz, P.E.
Infiltrator Systems, Inc
6 Business Park Road
P.O. Box 768
Old Saybrook, CT 06475

Subject: Product registration, Infiltrator TW-Series Polyethylene Septic Tanks

Dear Mr. Lentz,

The Division of Health Engineering has reviewed your application for registration of your product for use in Maine. This information was submitted pursuant to Section 1802 of the Maine State Plumbing Code, Subsurface Wastewater Disposal Rules (Rules).

Product Description

The Infiltrator TW-Series Septic Tank consists of the following models:

- Infiltrator TW-375 (375-gallon dosing tank)
- Infiltrator TW-900 (900-gallon effective capacity septic tank; 1,060-gallon dosing or holding tank)
- Infiltrator TW-1050 (1,050-gallon effective capacity septic tank; 1,217-gallon dosing or holding tank)
- Infiltrator TW-1250 (1,250-gallon effective capacity septic tank; 1,452-gallon dosing or holding tank)
- Infiltrator TW-1500 (1,500-gallon effective capacity septic tank; 1,766-gallon dosing or holding tank)

In each instance, the model number corresponds with the septic tank capacity in gallons. The Infiltrator TW-series tanks are designed for use with conventional onsite sewage disposal areas.

Claim

According to the information provided, the Infiltrator TW-series tanks meet or exceed relevant IAPMO standards.

Determination

On the basis of the information submitted, the Division has determined that Infiltrator TW-series tanks are acceptable for use in the State of Maine on a General Approval basis, provided that they are installed, operated, and maintained in conformance with the manufacturer's directions.

In the event that the product fails to perform as claimed by the applicant, use of Infiltrator TW-series tanks in Maine, including all installations approved pursuant to Section 1801.7 of the Rules, shall cease. Use of Infiltrator TW-series tanks shall not resume until the applicant and the Division have reached a mutually acceptable agreement for resolving the failure to perform as claimed.

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 Infiltrator TW-series tanks. 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. Jacobson, Environmental Specialist IV
Wastewater and Plumbing Control Program
Division of Health Engineering
e-mail: james.jacobsen@state.me.us