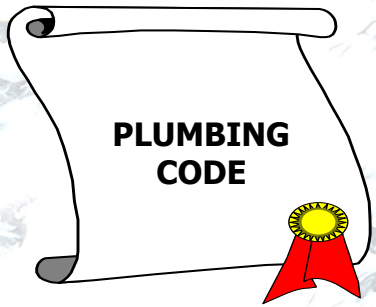


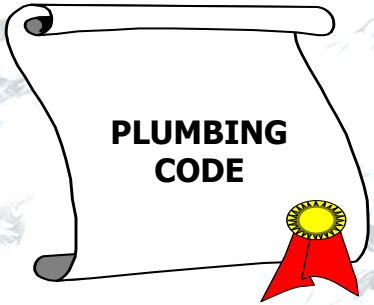
50 Years of Plumbing Codes

"…grease separators are required where commercial food is prepared, cooked, processed, …".

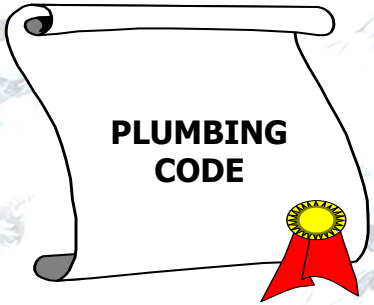
"…oil separators shall be provided for service stations, repair shops, garages, or any establishment where motor vehicles are repaired, lubricated, or maintained…".

What About Service Life?

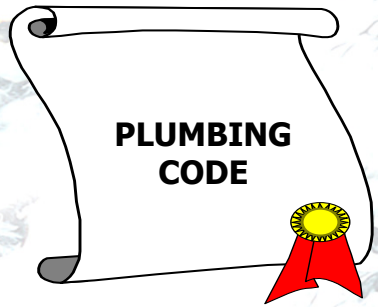
What About Effluent Discharge Quality?



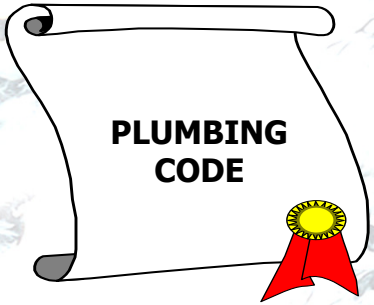
…..Plumbing Code Approved



…..Plumbing Code Approved



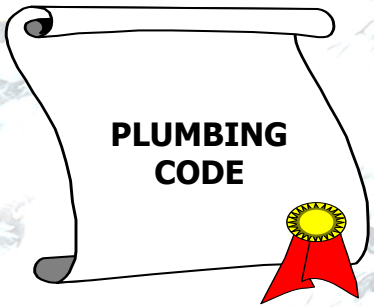
….Also Plumbing Code Approved



….Also Plumbing Code Approved

Quick Service Restaurant
Bottom completely gone in 8 years

Casual Dining Restaurant
Severe corrosion in 6 years

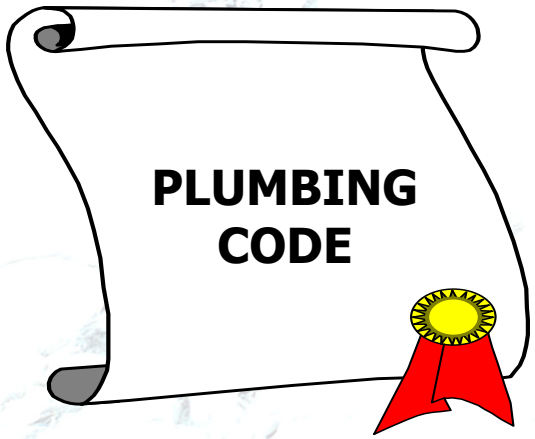


….A Word About Concrete

Chemical	Effect on Concrete
15% Hydrochloric Acid	At 10% rapid disintegration
25% Acetic Acid	30% Slow disintegration
5% Sodium Hydroxide	At 10% none, at 20% slow disintegration
10% Sodium Carbonate	None
Saturated Sodium Chloride	None, unless alternate wet and dry, then moderate to severe disintegration
5 ¼% Sodium Hypochlorite	Slow disintegration
Distilled Water	Soft water leaching of hydrated lime, causes disintegration
Hydrocarbon Oils and food fats	Moderate to severe disintegration

Source: Portland Cement Association: Effect of Substances on Concrete and Guide to Protective Treatments

Plumbing Fixture vs. Pollution Control Device



≠

I am still not sure I understand……

Federal EPA Guidance for Sewer Discharge:

The Clean Water Act Pretreatment Program recommends discharge concentration of various pollutants

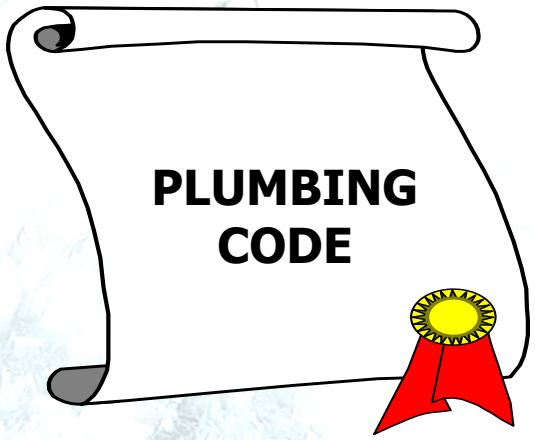
- mineral oil to less than 100ppm

- food grease to less than 100ppm

- sediment to less than 350ppm

Most counties have adopted these sewer use discharge limits ***AS REGULATION***

Case - Fried Seafood Restaurant Before…



….and After

Enforced Sewer Discharge Regulation of 100 ppm FOG

…..Winds of Change

Charlotte, North Carolina Code Change

"Effective January 1, 2005 (Plumbing) Mecklenburg County will no longer allow the use of "modified" septic tanks used as a grease interceptor. All grease interceptors shall be a manufactured device, designed for grease interception, with manufacturer's required sizing criteria."*

*(http://www.charmeck.org/Departments/LUESA/Code+Enforcement/Inside+the+Department/Services/Mechanical+and+Plumbing+Services/1-Customer+Alert.htm)

A Little History……


FLAMMABLE
CUYAHOGA
RIVER

FABLES OF THE CUYAHOGA:
RECONSTRUCTING A HISTORY OF
ENVIRONMENTAL PROTECTION

Jonathan H. Adler – Fordham Environmental Law Journal, 2002

City after city, state after state, had essentially failed in their efforts to protect their air and their water, the land, the health of their citizens. By 1970, our city skylines were so polluted that in many places it was all but impossible to see from one city skyscraper to another. . . . We had rivers that were fouled with raw sewage and toxic chemicals. One actually caught on fire. There was a very famous photograph from my teenage years of the Cuyahoga River burning. In fact, it was memorialized in a song at the time.

- Former EPA Administrator Carol Browner

Cleveland, even now I can remember
'Cause the Cuyahoga River
Goes smokin' through my dreams
Burn on, big river, burn on.

- Randy Newman, Burn On, Big River 1972

1972 – Federal Water Pollutions Control Act

1977 – Amended as Clean Water Act

- ***Basic structure for regulating the discharge of pollutants into U.S. waters***
- ***Gave EPA the authority to implement pollution control programs such as setting wastewater standards for industry***
- ***Continued requirements to set water quality standards for contaminants in surface waters***

1972 – Federal Water Pollutions Control Act

1977 – Amended as Clean Water Act

- ***Unlawful for any person to discharge any pollutant from a point source into navigable waters unless permitted under CWA provisions***

- ***Funded construction of sewage treatment plants***

- ***Recognized need for planning to address problems posed by non-point source pollution***

CWA National Enforcement Goals

- *Improve Nation's Waters*

- *Comprehensive framework of standards, technical tools, and financial assistance to address the many causes of pollution and poor water quality, including municipal and industrial wastewater discharges, polluted runoff from rural and urban areas, and habitat destruction.*

CWA National Enforcement Goals

1. *Requires municipalities and major industrial dischargers to meet performance standards to ensure pollution control*

2. *Charges states and tribes with setting specific water quality criteria appropriate for their waters and creating the pollution control programs to meet them*

3. *Provides funding for states and communities to help them meet their clean water infrastructure needs*

4. *Protects valuable wetlands and other aquatic habitats through a permitting process that ensures development and other activities are conducted in an environmentally sound manner*

CWA National Enforcement Programs

- *National Pollution Discharge Elimination System*
- *Pretreatment Program*
- *Oil and Hazardous Substance Spill Program*
- *Wet Weather Enforcement Programs*
- *Biosolid/Sludge Program*
- *Wetlands Dredged and Fill Material Program*

CWA National Enforcement Programs

National Pollution Discharge Elimination System

- **Protect public health and the environment by regulating point-source discharges into nation's waters**
  - ✓ ***Point Source - discrete conveyance such as a pipe, ditch, or spillway***
  - ✓ ***15,000 publicly owned treatment works (4000 major)***
  - ✓ ***85,000 industrial dischargers (2900 major)***
  - ✓ ***Issue permits***
  - ✓ ***Technology based or effluent water quality based limits***
  - ✓ ***Monitoring Discharges***
  - ✓ ***Reporting Compliances***

CWA National Enforcement Programs

Pretreatment Program

- ***Cooperative effort between Federal, State, and Local Environmental Agencies established to protect water quality***
  - ✓ ***Protect Publicly Owned Treatment Works (POTWs) from the introduction of pollutants that may interfere with plant operation or that may pass through untreated***
  - ✓ ***Improve opportunities for the POTW to reuse wastewater and sludge that is generated***

CWA National Enforcement Programs

Oil and Hazardous Substances Spill Program

- ***Cooperative effort between EPA and U.S. Coast Guard in preventing, preparing for, and responding to oil spills or hazardous substances that reach or may reach surface waters***

  - ✓ ***Civil Penalties of $27,500 per day and/or $1,100 per unit of oil or hazardous substance unlawfully discharged***

CWA National Enforcement Programs

*Wet Weather Enforcement Programs**

- ***Stormwater Program***
- ***Sanitary Sewer Overflow Program (SSO)***
- ***Combined Sewer Overflow Program (CSO)***
- ***Concentrated Animal Feeding Operations Program (CAFO)***

**** Current EPA National Enforcement Priorities for CWA Compliance***

SO WHAT ?!?!?!?!

Sanitary Sewer Overflows are this Generation's Burning River

Sanitary Sewer Overflows Threaten:

- ***Human Health***
- ***Recreation-based Economies***
- ***Natural Resources***
- ***Property Damage***
- ***Property Value***
- ***Fishing Industries***
- ***Manufacturing Industries***

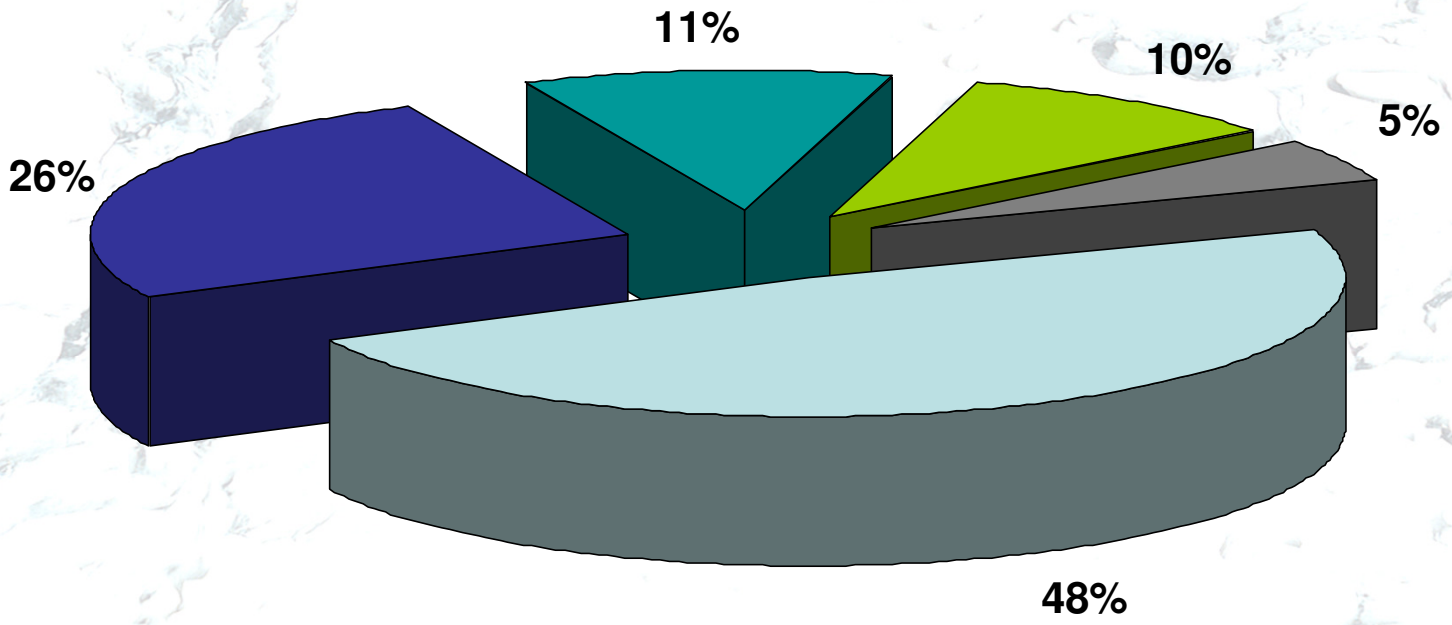
Sanitary Sewer Overflows

Stress on Sewer Infrastructure Takes it's Toll:

- ***Years of wear and tear***
- ***Freeze/thaw cycles, groundwater movement, seismic activity***
- ***Deterioration of pipes and joints***
- ***Lack of maintenance***
- ***Hydraulic stress from collection system bottlenecks***
- ***Incorrect operational procedures***
- ***Rapid development/Increasing population density***

Most Common SSO Reported Causes

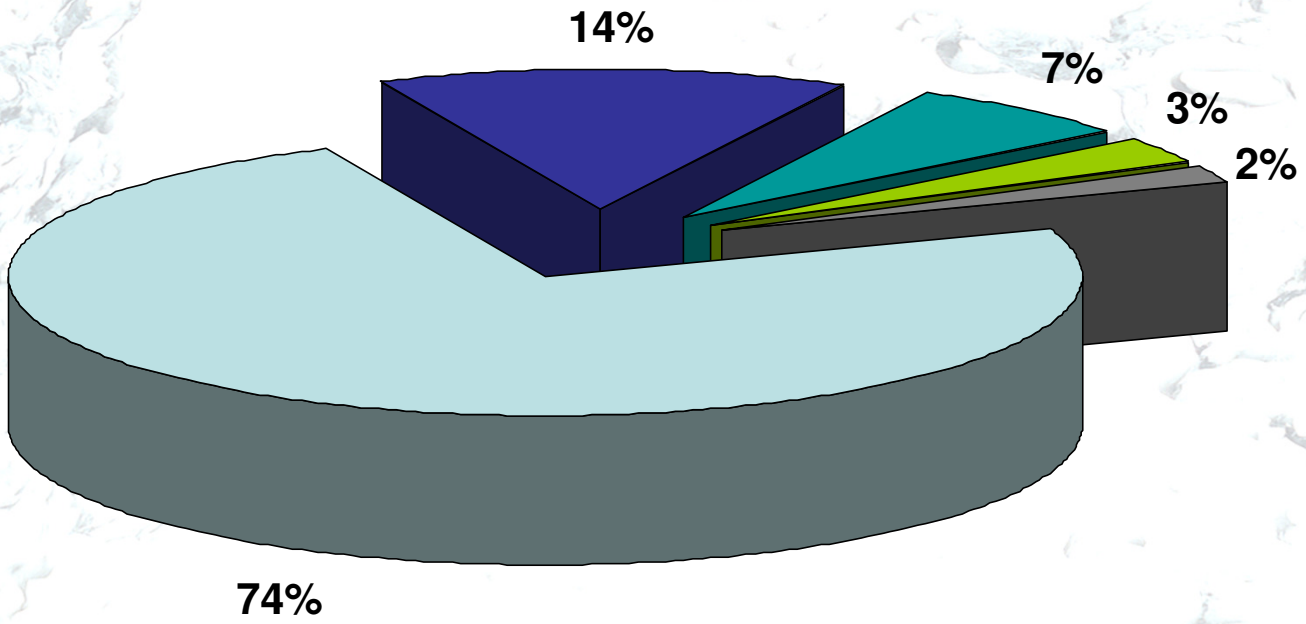
23,000 to 75,000 SSO's per year in U.S.; 3-10 billion gallons



Report to Congress on the Impact and Control of CSOs and SSOs

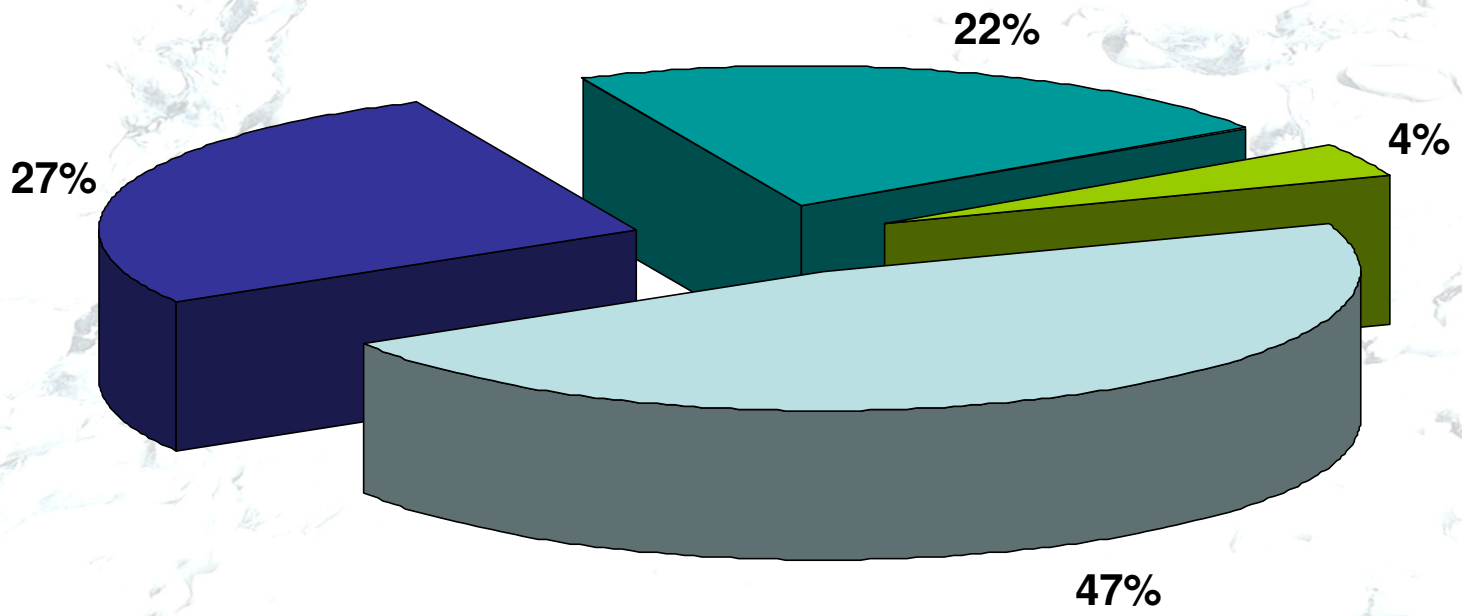
Most Common SSO Reported Causes

Communities with more than 100 SSO's per year



Report to Congress on the Impact and Control of CSOs and SSOs

Reported Cause of Blockage Events



Report to Congress on the Impact and Control of CSOs and SSOs

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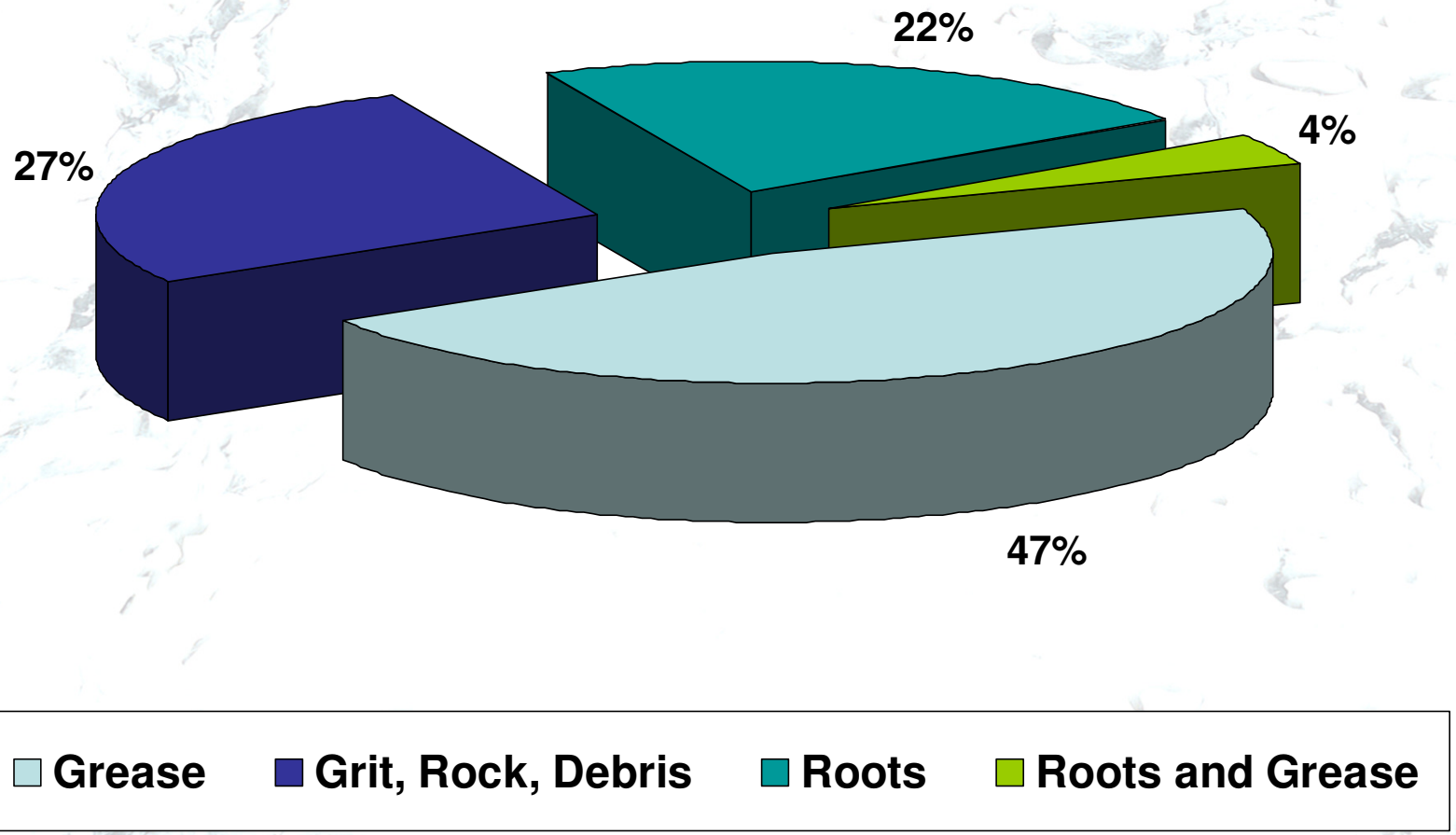


Estimates on the total cost of upgrading U.S. water and wastewater infrastructure

$ 600 Billion to $ 1 Trillion over the next 20 years

ASCE and Federal GAO estimates

Recent EPA Consent Decree

Clean Water Act Agreement Announced with the Sanitation District No. 1 of Northern Kentucky

(**WASHINGTON, D.C. – October 7, 2005**) – The U.S. Department of Justice and the U.S. Environmental Protection Agency today announced they have reached a comprehensive Clean Water Act settlement with the Sanitation District No. 1 of Northern Kentucky. At a cost of at least $880 million, the District has agreed to make extensive improvements to its sewer systems to eliminate unauthorized overflows of untreated raw sewage and to control overflows of combined sewage and stormwater. Each year, the District has been unlawfully discharging untreated sewage and experiencing overflows of combined sewage into the Ohio River and its tributaries in amounts totaling almost a billion gallons.

Northern Kentucky is not Alone

Mobile
Birmingham
Knoxville
Atlanta
Miami
New Orleans

Toledo
Cincinnati
Baltimore
Los Angeles
Louisville

$$ BILLIONS……all in the last 7 years

What Does the Future Hold?

- CSO, SSO, and Stormwater Pollution control are at the top of the Federal EPA's agenda for CWA compliance

- Municipalities that currently do not have issues with CSO, SSO, or Stormwater pollution are likely to avoid Federal EPA scrutiny and action…….*at least for now…….*

What Does the Future Hold?

- Municipal POTW's that have issues with CSO, SSO, and Stormwater pollution are coming under deeper scrutiny from the EPA
  - civil penalties
  - supplemental environmental programs to preserve greenways
  - injunctive relief to improve POTW operations

At a cost of $ BILLIONS

What Does the Future Hold?

- Identified municipalities with issues will be forced to, as part of a comprehensive plan to mitigate SSOs and CSO's, implement a more stringent FOG Management Program that focuses on
  - Food prep Best Management Practices
  - Pollutant removal technologies that are performance-based and also reliable over the long haul
  - Maintenance programs that include active testing and enforcement of effluent quality

Separator Considerations

Properties of Oil in Water

Free Oil

- *In liquid form, and is available to float to the surface; represents the majority of oil from food service establishments*

Dissolved Oil

- *Oil dissolved in water by virtue of a degreasing compound; will not separate*

Mechanically Emulsified Oil

- *Free oil agitated in water to form small droplets; will separate given enough time*

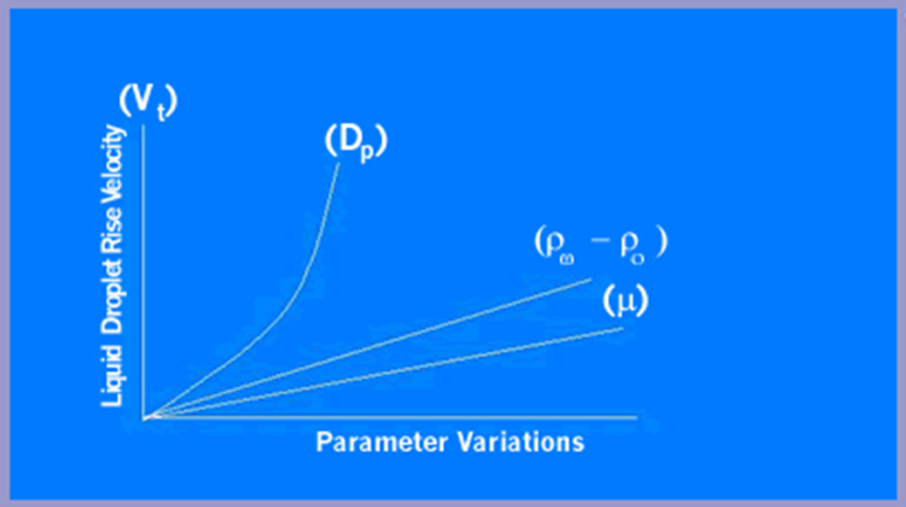
Chemically Emulsified Oil

- *Oil broken down into very small particles via a detergent and will not float to the surface*

Stoke's Law for Separation

Rise and Settle rates for a given system are dependent on:

1. Particle size
2. Difference in specific gravity vs. water
3. Temperature



where

D_p = Fluid Particle Diameter;ft.

g = Acceleration due to Gravity; ft/s^2

V_t = Terminal Velocity; ft/s

ρ_w = Density of Water; lb/ft^3

ρ_o = Density of Oil; lb/ft^3

μ = Fluid velosity; lb/ft - s

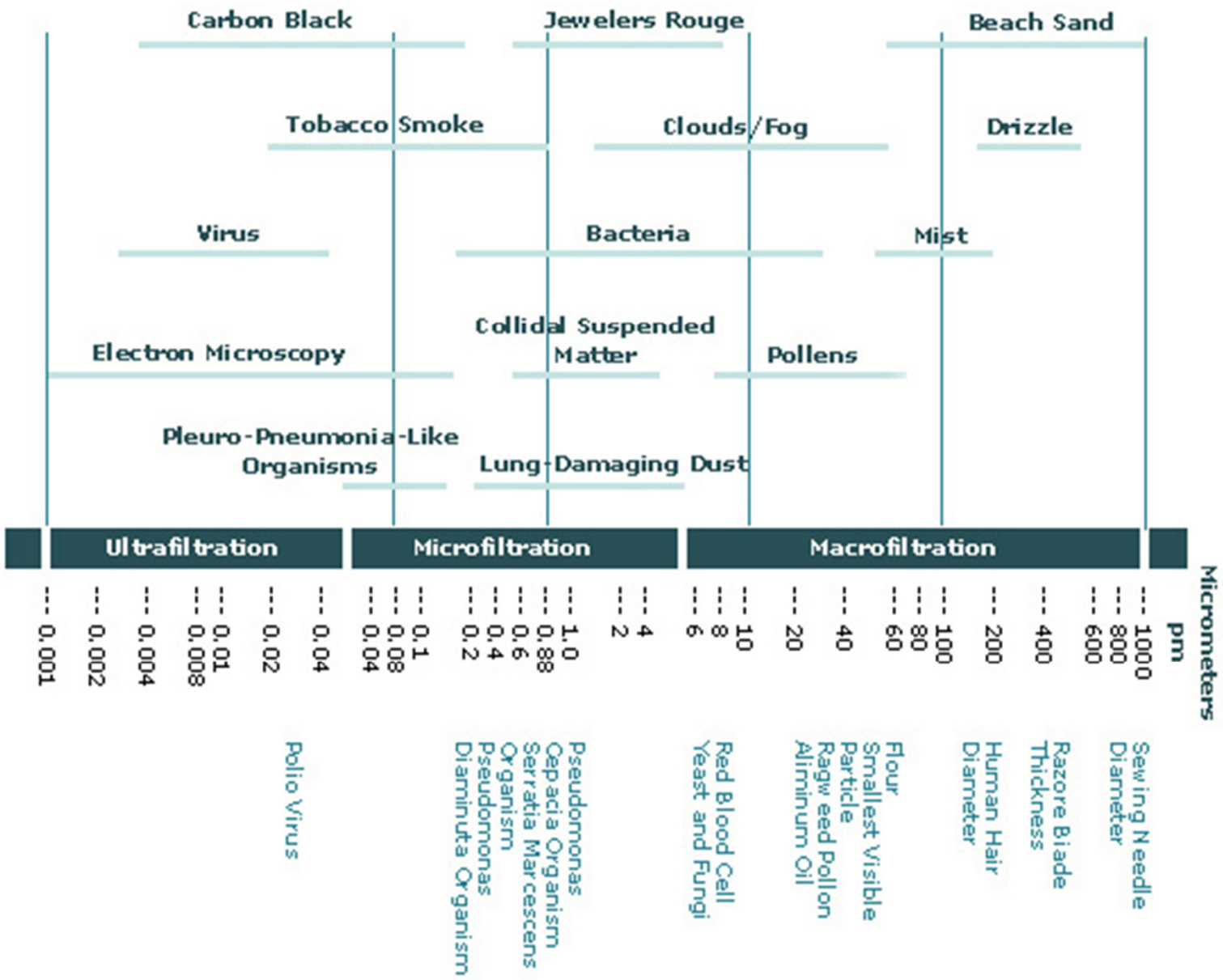
For Stoke's Law: $$V_t = \left(\frac{g}{18\mu}\right)(\rho_w - \rho_o) D_p^2$$

Rise and Settle: 6 inch vertical travel time

Droplet Size (micron)	Sp. Gr. 0.80	Sp. Gr. 0.90	Sp. Gr. 2.0
1000	0:00:01	0:00:03	0:00:00
500	0:00:06	0:00:11	0:00:01
300	0:00:16	0:00:32	0:00:03
100	0:02:21	0:04:43	0:00:28
80	0:03:40	0:07:24	0:00:44
60	0:06:32	0:13:10	0:01:17
40	0:14:41	0:29:37	0:02:54
20	0:58:43	1:58:30	0:11:37
10	3:54:56	7:54:00	0:46:30
5	15:39:43	31:35:58	3:06:00
1	391:32:50	789:59:16	77:29:53
0.5	1566:11:21	3159:57:05	309:59:32

Water at 68 degrees Fahrenheit; Hr:Min:Sec

What Does 100 Microns Look Like?



Considerations

- Sewer Discharge Regulations
- Nature of Pollutants from all Sources
- Pollutant Concentration
- Pollutant Specific Gravity
- Flow Management (volume, path, and pattern)
- Batch vs. Continuous
- Detention Time
- Temperature
- Pollutant Storage Capacity
- Resiliency and Reliability of Design

Components of a Properly Designed Separator

- ✓ *Incoming Flow Management*
  - Gentle introduction into separation chamber
  - Laminar rather than turbulent flow
  - No scouring of existing oil, grease, or sediment
  - Effective baffling configuration
- ✓ *Appropriate Residence Time*
  - Unit sized appropriately for peak kitchen fixture output
  - Effluent flowrate, pollutant load, composition, and temperature
- ✓ *Resilient Materials of Construction*
  - Corrosion proof for corrosive interceptor environment
  - Smooth, non-porous materials
  - Material and Structural warranties for extended periods

Components of a Properly Designed Separator

- ✓ *Easy to Clean*
  - Smooth inner walls
  - Cleanout ports and proper venting
  - Easy wash-down with central collection point at bottom for pumper access
- ✓ *Performance*
  - Ability to consistently remove pollutants to levels at or below that recommended by local discharge regulations
    - ✓ 100 ppm Food Grease
    - ✓ 100 ppm Mineral Oil
    - ✓ 350 ppm Sediment
  - Ease of sampling to insure that effluent test is representative of separator performance

The Whole Package
For Discharge Compliance

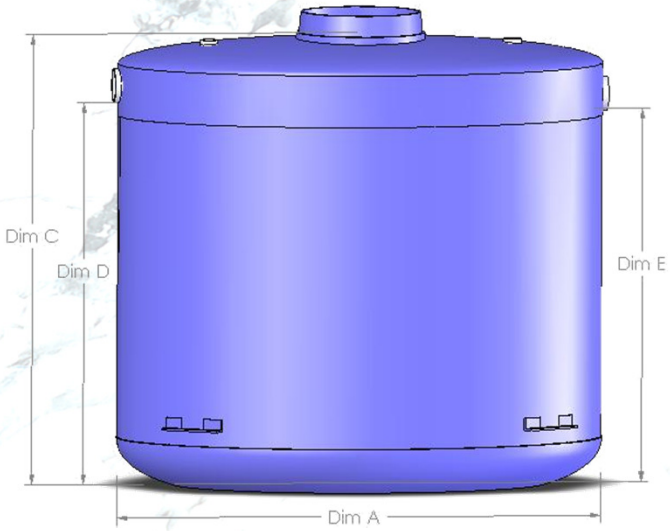
- ✓ *Engineered Separator sized correctly for the application to deliver effluent quality within sewer discharge regulations over the long haul*
- ✓ *An operations staff that follows Best Management Practices for keeping grease and oil out of the sinks and drains*
- ✓ *A consistent maintenance program to monitor and remove collected pollutants from the separator on a periodic basis so the separator continues to operate at maximum efficiency*

QUESTIONS?

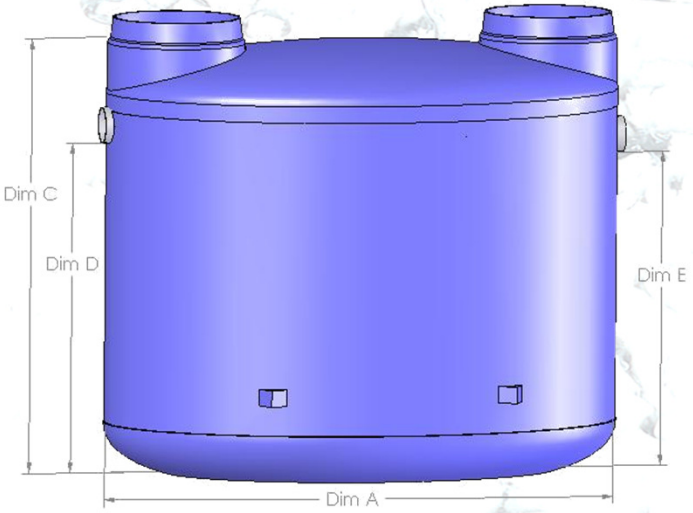
Grease Interceptors
Oil Separators

Proceptor™

Proceptor™ Product Line



International Plumbing Code System

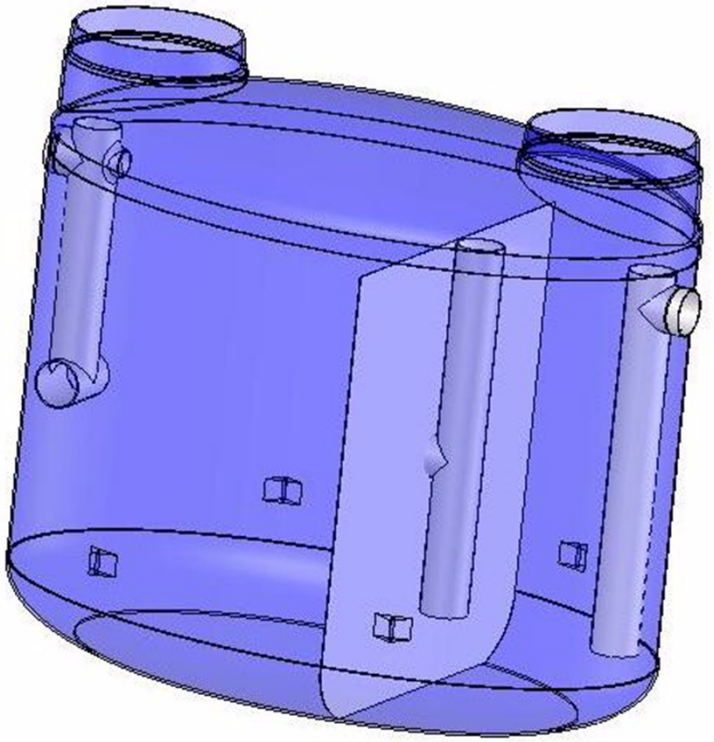


Uniform Plumbing Code System

Patented systems - US Patent #5,746,912; CDN Patent #2,195,822

Proceptor™ Benefits

- Fiberglass construction prevents soil and groundwater contamination
- Designed to better manage effluent flow and pollutant separation
- Engineered to meet EPA guidance for sewer discharge limits (100 ppm FOG, 350 ppm sediment)
- Ease of maintenance prevents drain backups and sewer blockages
- Capacities from 50 to 10,000 gallons plus
- Easy to install and service

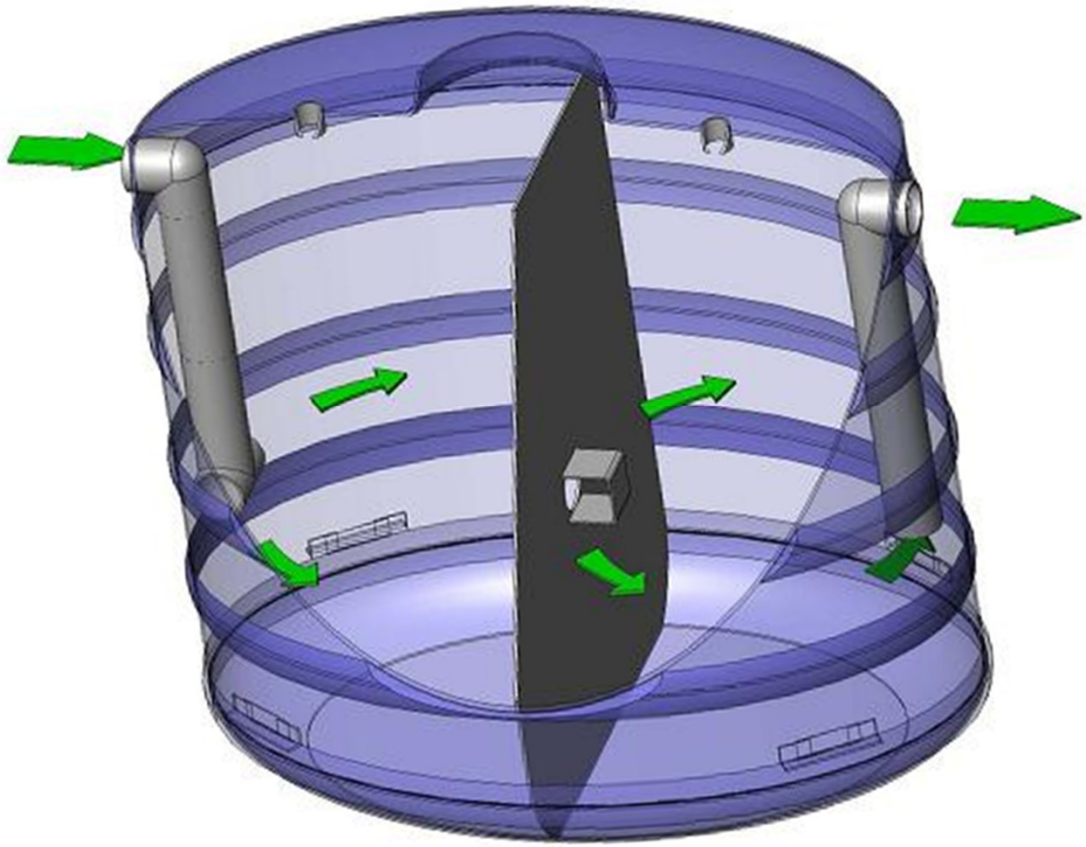


30 YEAR WARRANTY against cracks, corrosion, and structural failure!

Patented Flow Management

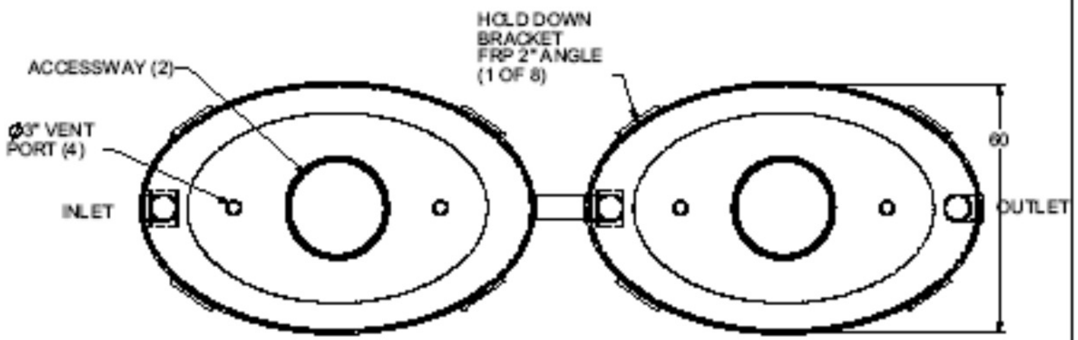
U.S. Patent # 5746912

Proceptor™

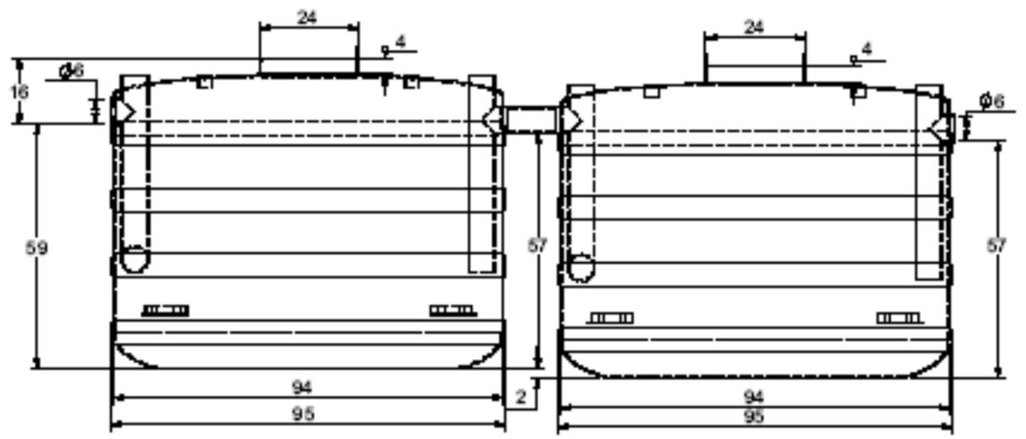


NOTES:

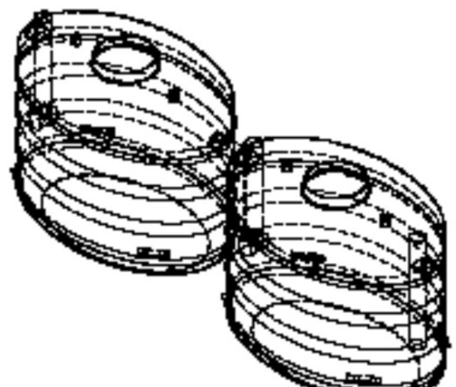
1. FOR GRAVITY APPLICATIONS ONLY. FOR PRESSURE APPLICATIONS CONTACT GREEN TURTLE.
2. ALL PROCEPTOR UNITS ARE MANUFACTURED WITH FIBERGLASS REINFORCED PLASTICS. PHYSICAL CHARACTERISTICS AND THICKNESS:
   ISOTHALIC POLYESTER RESIN AND E GLASS
   ASTM D 4097-ULC THIRD PARTY TESTED.
   MINIMUM THICKNESS 1/4" WALL AND 3/8" TOP AND BOTTOM BOWLS.
   MINIMUM ULTIMATE TENSILE STRENGTH, 12,000PSI
   MINIMUM FLEXURAL STRENGTH, 19,000PSI
   MINIMUM FLEXURAL MODULUS, 800,000PSI
   MINIMUM BURIAL DEPTH = 18" FOR NON TRAFFIC RATED AND
   MINIMUM BURIAL DEPTH = 30" FOR TRAFFIC RATED (GRADE TO INVERT OF INLET)
   MAXIMUM BURIAL DEPTH = 6FEET (FOR DEEPER INSTALLATIONS CALL PROCEPTOR FOR CUSTOM REINFORCEMENT)
3. ALL PROCEPTOR UNITS ARE TO BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS INSTALLATION INSTRUCTION.
4. SEE MANUFACTURER'S INSTALLATION INSTRUCTION FOR H20 TRAFFIC LOADING.
5. ALL PIPE STUBS ARE SDR 35 PVC SEWER MATERIAL WITH SCHEDULE 40 ADAPTORS FOR ALL PROJECTS LOCATED IN THE US.
6. ALL PROCEPTOR UNITS COME STANDARD WITH 6" INLET AND OUTLET (OTHER CUSTOM SIZES AVAILABLE AT EXTRA CHARGE).
7. EXTENSION COLLAR TO BE ORDERED TO FINISHED GRADE, CUT ON SITE FOR FINAL ADJUSTMENT AND CAULKED WITH SIKAFLEX BY CONTRACTOR.
8. COVERS AVAILABLE FOR H20 TRAFFIC LOADING, PEDESTRIAN LOADING OR ABOVE GROUND INSTALLATION.
9. UNLIMITED CAPACITY AVAILABLE. CONSULT PROCEPTOR FOR OTHER SIZES.
10. ALL PROCEPTOR ARE FACTORY TESTED.
11. 30 YEAR WARRANTY AGAINST LEAKS, AND STRUCTURAL FAILURE.
12. U.S. PATENT #5,746,912; CDN PATENT #2,195,822



TOP VIEW



FRONT VIEW



ISOMETRIC VIEW

TOTAL WET VOLUME:	2000 GAL
MAX. GREASE CAPACITY:	1025 GAL
MAX SOLIDS CAPACITY:	850 GAL
PEAK FLOW RATES	
PDI PERFORMANCE: [illegible]	575 GPM
LESS THAN 100 MG/L FOR FREE FAT, OIL, GREASE:	400 GPM
*CONSULT LOCAL AUTHORITIES FOR MINIMUM SIZE OF SEPARATORS	

TITLE: PROCEPTOR F.O.G. SEPARATOR
GMC 2000 GALLON INTERCEPTOR
6" INLET & OUTLET
24" MANWAY
ALL DIMENSIONS IN INCHES

PROJECT: WO:

✓	OPTIONS:
	GREASE SENSOR ALARM
	SUCTION PIPE FOR INDOOR INSTALLATION
	ABOVE GROUND INSTALLATION

REV	DATE	DRAWN
1		
2		
3	JUNE 3, 2005	L. SIMKINS
4		
5		
6		
7		
8		
9		
10		

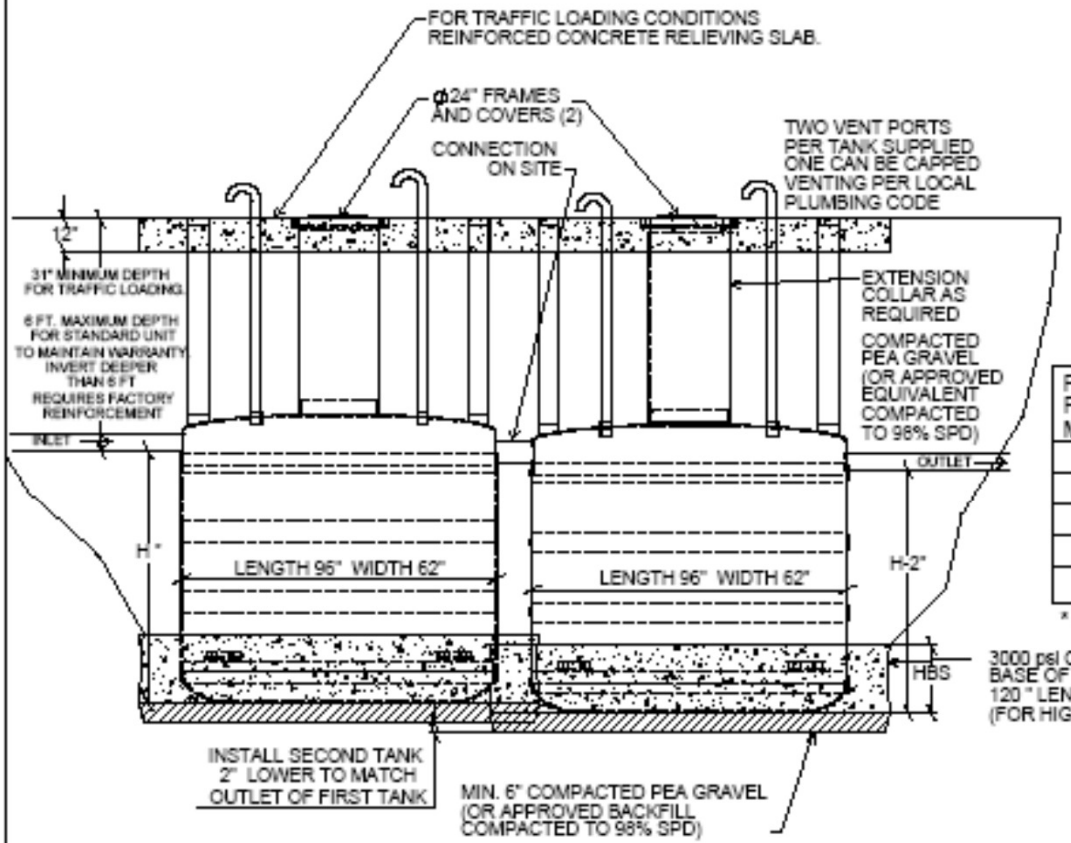
DRAWN BY: F CHANDLER
DRAWN DATE 9/14/04

Proceptor™
MANUFACTURER: GREEN TURTLE
877-428-8187 US 877-966-9444 CAN
GREENTURTLETECH.COM/PROCEPTOR

SIZE	DWG. NO.	REV.
A	GMC 2000	3

SCALE: 1:40 | DO NOT SCALE DRAWING | SHEET 1 OF 1

GMC 1000(2), 1500(2), 2000, 2600 AND 3000 INSTALLATION PROCEDURE



3000 psi CONCRETE READY MIX POUR 12" ALL AROUND BASE OF TANKS TO HEIGHT OF BUOYANCY SLAB
120 " LENGTH X 84" WIDTH X HBS (SEE TABLE)
(FOR HIGH WATER CONDITIONS ONLY)

NOTES:

1. EXCAVATE TO THE REQUIRED DEPTH, LENGTH AND WIDTH IN ACCORDANCE WITH OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) PRACTICES. PROVIDE 12" OF FREE SPACE AROUND THE UNIT AT THE BOTTOM.
2. INSTALL & LEVEL 6" LAYER OF COMPACTED PEA GRAVEL (OR APPROVED EQUIVALENTS)BACKFILL COMPACTED TO 98% STANDARD PROCTOR DENSITY (SPD))
3. FOR INSTALLATIONS WHERE THE SUBSURFACE WATER LEVEL MAY RISE ABOVE THE BOTTOM OF THE TANK AT ANY TIME, CONTINUE TO STEP 4. OTHERWISE, INSTALL AND LEVEL TANK AND GO TO STEP 9.
4. IF USING APPROVED BACKFILL MATERIAL INSTEAD OF PEA GRAVEL, INSTALL GEOTEXTILE FILTER FABRIC TO PREVENT MIGRATION AND COMPACT BACKFILL IN 6" TO 8" LAYERS TO 98% SPD.
5. LEVEL TANK ON BACKFILL.
6. FILL THE SEPARATOR WITH WATER UP TO THE REQUIRED HEIGHT OF THE BUOYANCY SLAB (HBS) - SEE TABLE BELOW.
7. POUR CONCRETE READY MIX ANTI-BUOYANCY SLAB 12" ALL AROUND THE SEPARATOR CELLS TO HEIGHT REQUIRED. ENSURE THAT ANCHOR BRACKETS ON SIDE OF TANK ARE COVERED.
8. FILL SEPARATOR WITH WATER UP TO THE INLET/OUTLET PIPES.
9. BACKFILL UP TO INLET/OUTLET PIPES WITH COMPACTED PEA GRAVEL (OR APPROVED EQUIVALENT COMPACTED TO 98% S.P.D.) IN 6" TO 8" LAYERS.
10. CONNECT THE INLET, OUTLET, AND VENT PIPING. USE ONE VENT PORT AND CAP OTHER FOR EASE OF INSTALLATION. VENT PER LOCAL PLUMBING CODE.
11. INSTALL EXTENSION COLLAR. USE FIBERGLASS SIKAFLEX CAULKING FOR WATERTIGHT SEAL IF DESIRED. EXTEND CLEANOUT EXTENSIONS.
12. BACKFILL WITH COMPACTED PEA GRAVEL, (OR APPROVED EQUIVALENT COMPACTEDTO 98% SPD.) TO MINIMUM 6" ABOVE BASE OF EXTENSION COLLAR.
13. FOR TRAFFIC LOADING CONDITIONS, POUR REINFORCED BEARING SLAB AT SURFACE GRADE WITH TRAFFIC LOADING FRAME AND COVER EMBEDDED IN SLAB AND CENTRED OVER EXTENSION COLLAR. FOR TRAFFIC LOADING SLAB, CONSULT WITH STRUCTURAL ENGINEER.
14. US PATENT # 5,746,912, CDN PATENT # 2,195,822

PROCEPTOR F.O.G. SEPARATOR MODEL	INLET INVERT TO TANK BOTTOM (H")	HEIGHT OF BUOYANCY SLAB (HBS)	DRY WEIGHT OF UNIT *
GMC 1000(2)	32"	18"	1000 lbs
GMC 1500(2)	45"	19"	1150 lbs
GMC 2000	59"	26"	1300lbs
GMC 2600	74"	35"	1490 lbs
GMC 3000	85"	41"	1610 lbs

* Weight includes both tanks without covers and collars

(PROCEPTOR SEPARATORS MUST BE INSTALLED IN ACCORDANCE WITH ALL RELEVANT FEDERAL, PROVINCIAL/STATE, AND LOCAL CODES INCLUDING LOCAL PLUMBING CODE)

* ACTUAL HEIGHT MAY VARY SLIGHTLY.

TITLE: PROCEPTOR F.O.G. SEPARATOR INSTALLATION PROCEDURE FOR GMC MODELS 1000(2) - 3000

ALL DIMENSIONS IN INCHES

PROJECT: WO:

OPTIONS:

REV	DATE	DRAWN
1		
2		
3		
4	MAY 27, 2005	L. SIMKINS
5	JUNE 16, 2005	L. SIMKINS
6	AUGUST 9, 2005	L. SIMKINS
7	SEPTEMBER 7, 2005	L. SIMKINS
8		
9		
10		

DRAWN BY: F. CHANDLER

DRAWN DATE 9/14/04

Proceptor™
MANUFACTURER: GREEN TURTLE
877-428-8187 US 877-966-9444 CAN
GREENTURTLETECH.COM/PROCEPTOR

SIZE	DWG. NO.	REV.
A	INSTALL GMC 1000(2)-3000	7

SCALE:1:60 | DO NOT SCALE DRAWING | SHEET 1 OF 1

NOTES:

1. ALL PROCEPTOR UNITS ARE MANUFACTURED WITH FIBERGLASS REINFORCED PLASTICS. PHYSICAL CHARACTERISTICS AND THICKNESS:
ISOTHALIC POLYESTER RESIN AND E GLASS
ASTM D 883-ULC THIRD PARTY TESTED.
MINIMUM THICKNESS 1/4" WALL AND 3/8" TOP AND BOTTOM BOWLS.
MINIMUM ULTIMATE TENSILE STRENGTH, 12,000PSI
MINIMUM FLEXURAL STRENGTH, 19,000PSI
MINIMUM FLEXURAL MODULUS, 600,000PSI
MINIMUM BURIAL DEPTH =24" FOR NON TRAFFIC RATED AND
MINIMUM BURIAL DEPTH =36" FOR TRAFFIC RATED
(GRADE TO INVERT OF INLET)
MAXIMUM BURIAL DEPTH =6 FEET (FOR DEEPER INSTALLATIONS CALL PROCEPTOR FOR CUSTOM REINFORCEMENT)
2. ALL PROCEPTOR UNITS ARE TO BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS INSTALLATION INSTRUCTION.
3. SEE MANUFACTURERS INSTALLATION INSTRUCTION FOR H20 TRAFFIC LOADING.
4. ALL PIPE STUBS ARE PVC SEWER MATERIAL UNLESS OTHERWISE SPECIFIED.
5. ALL PROCEPTOR UNITS COME STANDARD WITH 6" INLET OR OUTLET (OTHER CUSTOM SIZES AVAILABLE AT EXTRA CHARGE).
6. EXTENSION COLLAR TO BE ORDERED TO FINISHED GRADE, CUT ON SITE FOR FINAL ADJUSTMENT AND CAULKED WITH SIKAFLEX BY CONTRACTOR.
7. COVERS AVAILABLE FOR H20 TRAFFIC LOADING, PEDESTRIAN LOADING OR ABOVE GROUND INSTALLATION.
8. UNLIMITED CAPACITY AVAILABLE. CONSULT PROCEPTOR FOR OTHER SIZES.
9. ALL PROCEPTOR ARE FACTORY TESTED.
10. IAPMO PS 60-95; ULC S656 FOR 100PPM, DISCHARGE AT 150 GPM
11. 30 YEAR WARRANTY AGAINST LEAKS, AND STRUCTURAL FAILURE.
12. U.S. PATENT #5,746,912; CDN. PATENT #2,195,622
13. WHERE BAFFLE MEETS TANK BODY IS STRUCTURALLY AND INTEGRALLY FIBER GLASSED STRAPPED ALL AROUND.

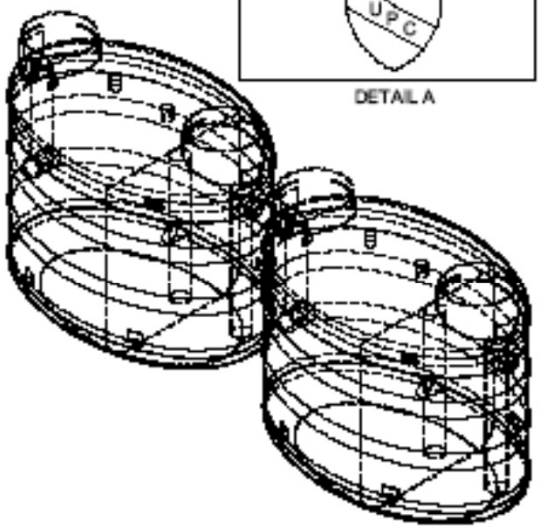
MANUFACTURER:
GREEN TURTLE

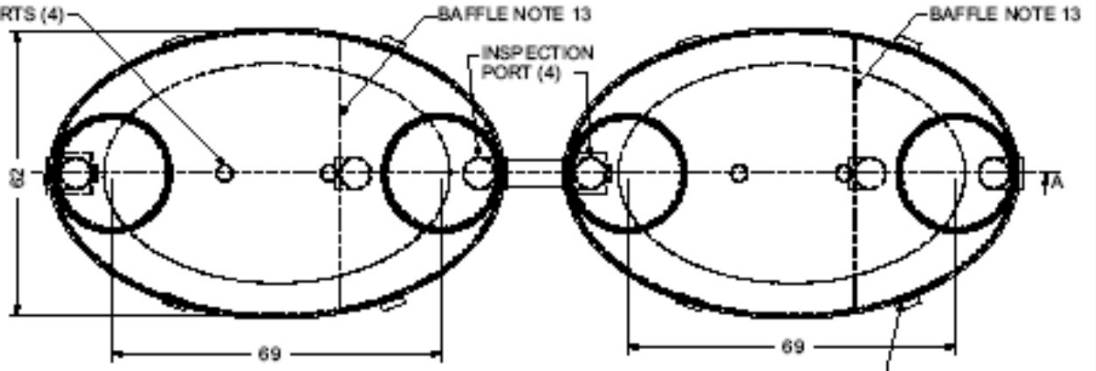
Proceptor™

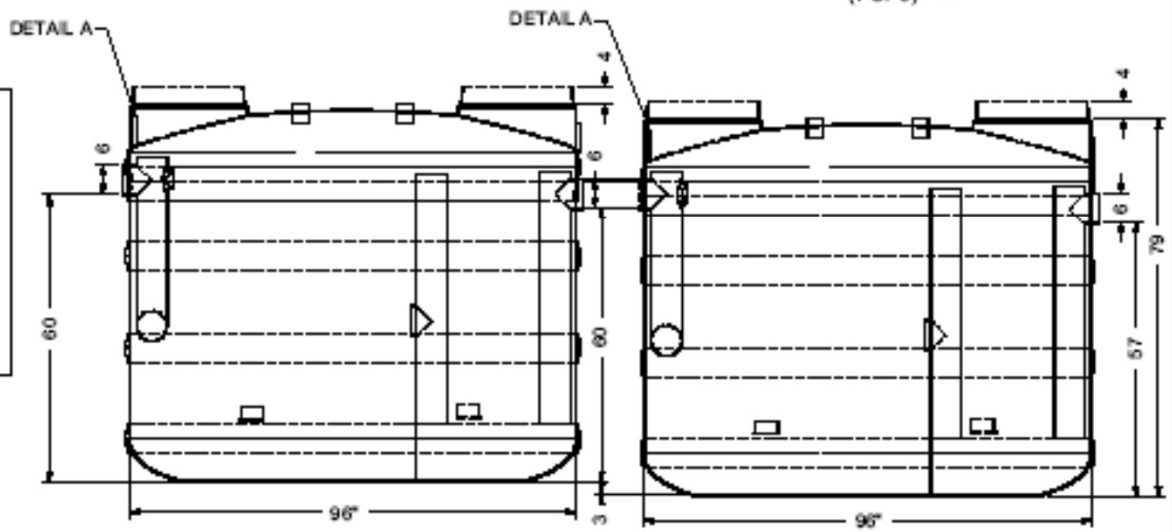
MODEL NUMBER: 2000 GMC UPC
CAPACITY: 2000 GALLONS

UPC

DETAIL A







SECTION A-A
SCALE 1 : 35

FOR UPC/IAPMO INSTALLATIONS

TITLE: PROCEPTOR F.O.G. SEPERATOR
GMC 2000 UPC GALLON INTERCEPTOR
6" INLET & OUTLET
24" MANWAY

PROJECT: WO:

- [x] OPTIONS:
- [ ] OIL DRAW OFF PIPE TO CONNECT TO EXTERNAL OIL HOLDING TANK
- [ ] SUCTION PIPE FOR INDOOR INSTALLATION
- [ ] OIL/GREASE SENSOR ALARM
- [ ] COMBICER (FOR 1 Gpm TRAFFIC)

REV	DATE	DRAWN
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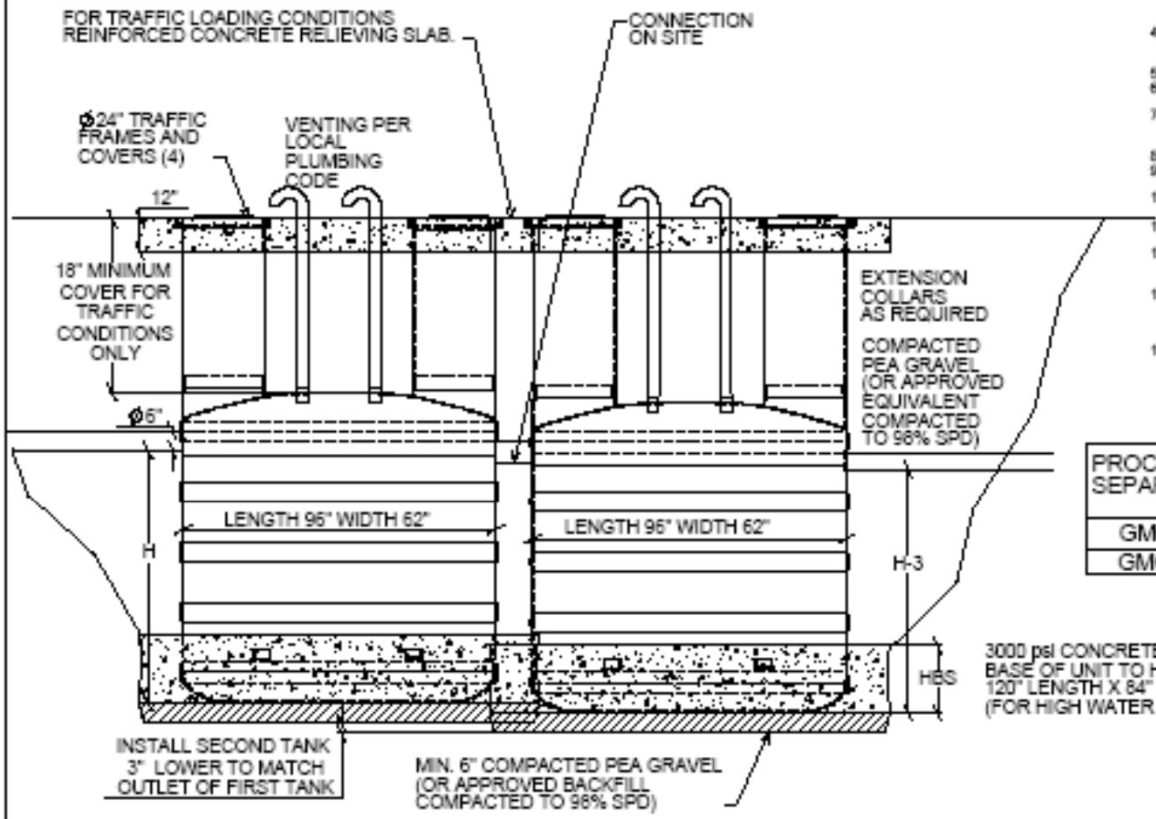
DRAWN BY: F CHANDLER
DRAWN DATE: 6/25/04

Proceptor™
MANUFACTURER: GREEN TURTLE
877-428-8187 US 877-966-9444 CAN
GREENTURTLETECH.COM/PROCEPTOR

SIZE	DWG. NO.	REV.
A	GMC 2000 UPC	2

SCALE: 1:35 | DO NOT SCALE DRAWING | SHEET 1 OF 1

GMC 2000 AND 2600 UPC FOR UPC/IAPMO INSTALLATION PROCEDURE



NOTES:

1. EXCAVATE TO THE REQUIRED DEPTH, LENGTH AND WIDTH IN ACCORDANCE WITH OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) PRACTICES. PROVIDE 12" OF FREE SPACE AROUND THE UNIT AT THE BOTTOM.
2. INSTALL & LEVEL 6" LAYER OF COMPACTED PEA GRAVEL (OR APPROVED EQUIVALENT BACKFILL COMPACTED TO 95% STANDARD PROCTOR DENSITY (SPD)).
3. FOR INSTALLATIONS WHERE THE SUBSURFACE WATER LEVEL MAY RISE ABOVE THE BOTTOM OF THE TANK AT ANY TIME, CONTINUE TO STEP 4. OTHERWISE, INSTALL AND LEVEL TANK AND GO TO STEP 9.
4. IF USING APPROVED BACKFILL MATERIAL INSTEAD OF PEA GRAVEL, INSTALL GEOTEXTILE FILTER FABRIC TO PREVENT MIGRATION AND COMPACT BACKFILL IN 6" TO 8" LAYERS TO 95% SPD.
5. LEVEL TANK ON BACKFILL.
6. FILL THE SEPARATOR WITH WATER UP TO THE REQUIRED HEIGHT OF THE BUOYANCY SLAB (HBS) - SEE TABLE BELOW.
7. POUR CONCRETE READY MIX ANTI-BUOYANCY SLAB 12" ALL AROUND THE SEPARATOR CELLS TO HEIGHT REQUIRED. ENSURE THAT ANCHOR BRACKETS ON SIDE OF TANK ARE COVERED.
8. FILL SEPARATOR WITH WATER UP TO THE INLET/OUTLET PIPES.
9. BACKFILL UP TO INLET/OUTLET PIPES WITH COMPACTED PEA GRAVEL (OR APPROVED EQUIVALENT COMPACTED TO 95% S.P.D.) IN 6" TO 8" LAYERS.
10. CONNECT THE INLET, OUTLET, AND VENT PIPING. VENT PER LOCAL PLUMBING CODE.
11. INSTALL EXTENSION COLLAR. USE FIBERGLASS SIKAFLEX CAULKING FOR WATERTIGHT SEAL IF DESIRED.
12. BACKFILL WITH COMPACTED PEA GRAVEL, (OR APPROVED EQUIVALENT COMPACTED TO 95% SPD) TO MINIMUM 6" ABOVE THE BASE OF THE EXTENSION COLLAR.
13. FOR TRAFFIC LOADING CONDITIONS, POUR REINFORCED BEARING SLAB AT SURFACE GRADE WITH TRAFFIC LOADING FRAME AND COVER EMBEDDED IN SLAB AND CENTRED OVER EXTENSION COLLAR. FOR TRAFFIC LOADING SLAB, CONSULT WITH STRUCTURAL ENGINEER.
14. US PATENT # 5,746,912; CDN PATENT # 2,195,822

PROCEPTOR F.O.G. SEPARATOR MODEL	INLET INVERT TO TANK BOTTOM (H")	HEIGHT OF BUOYANCY SLAB (HBS)	DRY WEIGHT OF UNIT
GMC 2000 UPC	60"	16"	1350 lbs
GMC 2600 UPC	75"	22"	1550 lbs

3000 psi CONCRETE READY MIX POUR 12" AROUND BASE OF UNIT TO HEIGHT OF BOUYANCY SLAB 120" LENGTH X 84" WIDE X HBS (SEE TABLE) (FOR HIGH WATER CONDITIONS ONLY)

BURIAL DEPTH TO INVERT NOT TO EXCEED 6 FT. BELOW GRADE WITHOUT FACTORY REINFORCEMENT.

(PROCEPTOR SEPARATORS MUST BE INSTALLED IN ACCORDANCE WITH ALL RELEVANT FEDERAL, PROVINCIAL/STATE, AND LOCAL CODES INCLUDING LOCAL PLUMBING CODE

* ACTUAL HEIGHT MAY VARY SLIGHTLY. MEASURE OR CONTACT PROCEPTOR TO CONFIRM DIMENSION

TITLE: PROCEPTOR F.O.G. SEPARATOR INSTALLATION FOR GMC 2000 AND 2600 UPC

PROJECT: WO:

☑ OPTIONS:

REV.	DATE	DRAWN
1		
2		
3	JUNE 1, 2005	S. SIMKINS
4	SEPTEMBER 20, 2005	S. SIMKINS
5		
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DRAWN BY: F CHANDLER

DRAWN DATE 6/18/04

Proceptor™
MANUFACTURER: GREEN TURTLE
877-428-8187 US 877-966-9444 CAN
GREENTURTLETECH.COM/PROCEPTOR

SIZE	DWG. NO.	REV.
A	INSTALL GMC 2000-2600 UPC	4

SCALE: 1:100 DO NOT SCALE DRAWING SHEET 1 OF 1

Proceptor™

THANK YOU!!