Highland Tank

1510 Stoystown Road • Friedens, PA 15541 • www.highlandtank.com

# Model 20,000 TB-R-PGI

Aboveground Rectangular Single-wall, Triple Basin Passive Grease Interceptor

### Specifications: Aboveground Steel Gravity Based Grease Interceptor

### Project Description/Summary: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The Contractor shall furnish the labor, materials, equipment, appliances, services and hauling, and perform operations in connection with the construction and installation of the work. Work shall be as herein specified and as denoted on the accompanying drawings but not limited to the following general terms of work:

Provide and install \_\_\_\_\_\_ Highland Tank 20,000 gallon capacity Model TB – 20,000 Triple Basin Aboveground Rectangular Passive Grease Interceptor (PGI). Gravity-based grease interceptor shall be constructed of high-strength, mild carbon steel to ASTM specifications.

Interceptor(s) shall be 35'-8” long, 10’-0” wide and 9'-0” high; having a total volume of 20,000 gallons and a grease holding capacity of 51,252 pounds (6,744 gallons) to comply with the retention time requirements of the plumbing code. The sizing and construction of this interceptor is consistent with industry protocols for complying with the sewer pretreatment regulations, therefore an interceptor of smaller volume or multiple, interconnecting vessel construction is not permissible.

PERFORMANCE

Grease Interceptor shall be designed to prevent large amounts of pipe-clogging fats, oil, and grease (FOG) and solid waste materials from entering the sanitary sewer system. Interceptor shall have three (3) compartments to minimize turbulence and promote separation. Interceptor shall contain Highland’s Diffusion and Switchback Baffling System to retain wastewater long enough to allow liquefied grease to cool down, separate, and congeal. The free fats, oil, and grease (FOG) concentration in the effluent from the interceptor shall not exceed 100 mg/l (100 PPM) to satisfy sanitary sewer pretreatment requirements.

1.0 APPLICATION

The Triple Basin Passive Grease Interceptor shall be designed to intercept and collect liquid greasy waste and/or garbage from the discharge piping originating from the (food service facilities/large commercial/institutional kitchen). Flow to the interceptor shall be by gravity. Interceptor shall remove the floating and settleable wastes and prevent their interference with the proper drainage and treatment of municipal wastewater. Interceptor shall be installed underground with top access at or above grade level.

2.0 DESIGN CRITERIA

* 1. The Interceptor shall meet the requirements of the International Association of Plumbing and Mechanical Officials (IAPMO) Material and Property Standard for Grease Interceptors and Clarifiers IAPMO PS 80-2006.
  2. The Interceptor shall be constructed of high-strength, mild carbon steel with capacities, dimensions, construction, and thickness shall be in strict accordance with Underwriters Laboratories, Subject UL-142 Standard for Safety, Steel Aboveground Tanks for Flammable and Combustible Liquids, December 28, 2006, Single Wall construction.
  3. The Interceptor shall be the standard product of a steel tank manufacturer regularly engaged in the production of such equipment. No subcontracting of tank fabrication shall be permitted.
  4. The Interceptor shall be fabricated, inspected and pressure tested for leakage before shipment from the factory by manufacturer as a completely assembled, single vessel ready for installation.
  5. The Interceptor shall be rectangular, horizontal, atmospheric-type steel vessel. The Interceptor shall have the structural strength to withstand static and dynamic hydraulic loading while empty and during operating conditions. Calculations, signed and stamped by a Registered Professional Engineer shall be submitted to document structural strength under specified overbearing or external pressure. An interceptor with a reduced shell thickness is not permissible.
  6. The Interceptor shall consist of inlet and outlet connections with internal influent nozzle, non-clogging flow diffusion and energy dissipater baffle, fore-basin with heavy duty sludge baffle, fore-basin grease dam positioned to prevent discharge of FOG that has been separated from the water, large sludge and FOG pump-out access, mid-basin with heavy duty sludge baffle, mid-basin grease dam positioned to prevent discharge of FOG that has been separated from the water, large sludge and FOG pump-out access, after-basin, after-basin effluent flow transfer baffle, large sludge and FOG pump-out access, lifting lugs and fittings for vent, sampling, gauging.

3.0 GENERAL DESCRIPTION

The Interceptor shall be rectangular with construction and thickness in strict accordance with Underwriters Laboratories Subject 142. The Interceptor shall be a pre-packaged, pre-engineered, ready to install unit consisting of:

* 1. An influent connection \_\_\_\_\_\_ inch, with plain end (PE). A factory welded internal influent nozzle at the inlet end of the interceptor. Nozzle discharge to be located at the furthest diagonal point from the effluent discharge opening.
  2. Nozzle to discharge influent across non-clogging flow diffusion baffle, with discharge located below the normal liquid level. Flow diffusion baffle shall be angled and designed to:
     1. Reduce horizontal velocity and flow turbulence.
     2. Distribute the flow equally over the interceptors cross sectional area.
     3. Direct the flow in a serpentine path in order to enhance hydraulic characteristics and fully utilize all interceptor volume.
     4. Completely isolate all inlet turbulence from the interceptor fore chamber to prevent re-suspension of separated FOG.
     5. Promote the separation of settleable solids from wastewater.
  3. A large internal fore-basin to disperse flow and collect separated FOG and sludge.
  4. A heavy-duty sludge baffle to retain sludge and prevent it from migrating along the interceptor bottom. Rectangular baffle shall concentrate sludge along bottom for easy removal from above.
  5. One (1) grease dam to allow for discharge from the bottom of the fore-basin only and positioned so that there cannot be a straight-line flow between the inlet and the outlet. Switchback Baffling shall be incorporated to retain wastewater long enough to allow liquefied grease to cool down, separate, and congeal.
  6. Three \_\_\_\_\_\_ inch diameter manholes, UL approved, complete with cover, gasket, and bolts. Manholes shall be placed over the inlet to facilitate access into fore-basin for inspection, pumping, cleaning, and access. Heavy-duty striker plates shall be placed under the manholes to protect the tank shell during pump-out operations.
  7. A large internal mid-basin to further disperse flow and collect separated FOG and sludge.
  8. A heavy-duty sludge baffle to retain sludge and further prevent it from migrating along the interceptor bottom.
  9. One (1) grease dam to allow for discharge from the bottom of the mid-basin only and positioned so that there cannot be a straight-line flow between the inlet and the outlet.
  10. One \_\_\_\_\_\_ inch diameter manhole, UL approved, complete with cover, gasket, and bolts. Manhole shall be placed to facilitate access into fore-basin for inspection, pumping, cleaning, and access. Heavy-duty striker plates shall be placed under the manhole to protect the tank shell during pump-out operations.
  11. A large internal after-basin to collect separated grease.
  12. A heavy-duty sludge baffle to retain sludge and prevent it from entering the effluent Indirect Flow Transfer baffle.
  13. An internal effluent Indirect Flow Transfer baffle. Baffle is designed to prevent short-circuiting by transferring flow back into the interceptor and allowing treated wastewater to indirectly exit from the bottom sides of baffle only.
  14. One \_\_\_\_\_\_ inch diameter manhole, UL approved, complete with cover, gasket, and bolts. Manhole shall be placed over the outlet to facilitate access into after-basin for inspection, pumping, cleaning, and access. Heavy-duty striker plates shall be placed under the manhole to protect the tank shell during pump-out operations.
  15. A factory welded effluent connection \_\_\_\_\_\_ inch, with plain end (PE).
  16. Fittings for cleanout, vent, sampling, and gauge.
  17. Lifting lugs at balancing points for handling and installation.
  18. Identification plates: Plates to be affixed in prominent location and be durable and legible throughout equipment life.
  19. External Corrosion Protection System consisting of:
      1. External surfaces commercial grit blast coated with epoxy primer and finish coating. A 15,000-volt spark test shall be performed to ensure coating integrity.
  20. Internal surfaces commercial grit-blast coated 15 mils DFT Full Immersion, High Temperature, Acid-resistant Polyurethane Lining. Lining shall be of a light color to aid in visual inspection of the interior.

4.0 CONSTRUCTION AND MATERIALS

Refer to UL 142 Specifications.

5.0 QUALITY ASSURANCE

* 1. Submittals:
     1. Shop Drawings: shop drawings for grease interceptors shall show principal

dimensions and location of all fittings.

* + 1. Instructions: provide three complete sets of installation, operation, and

maintenance instructions with interceptor.

* + 1. Quality Control: Quality control and inspection procedures and reports shall be

considered of the submittal package.

* 1. Warranty
     1. The manufacturer shall warrant its products to be free from defects in material and workmanship for a period of one year from the date of shipment. The warrant shall be limited to repair or replacement of the defective part(s).

6.0 OPTIONS

Interceptor shall be furnished with:

* 1. \_\_\_\_\_\_Access ladder, platform, walkway.
  2. FOGSWatch monitoring system
  3. Supports

7.0 APPROVED MANUFACTURERS

The Triple Basin Passive Grease Interceptor shall be manufactured by:

Highland Tank, 1510 Stoystown Rd., Friedens, PA 15541

814.443.6800, Fax: 814.444.8662, [www.highlandtank.com](http://www.highlandtank.com)