



LUC

LONDON UTILITY COMMISSION

Grease Trap Specifications

Wm Kenneth Wilson

Engineer • Surveyor • Project Manager

1005 West 5th Street, P.O. Box 1169, London, Kentucky 40743-1169

email kenwilsonpe@windstream.net

Telephone (606) 862-7612



London Utility Commission

801 North Main Street
London, Kentucky 40741
Telephone: (606) 864-2103
web site: londonutilitycommission.com

Zach Creech, Superintendent
zcreech@londonutilitycommission.com

Junior Hammons, Inspector
jhammons@londonutilitycommission.com
cell number 606-401-5268

London Utility Commission (LUC) Grease Trap Specifications

SCOPE AND PURPOSE:

The purpose of these guidelines is to ensure compliance with LUC's regulatory requirements. The accumulation of grease within the collection system and treatment works can result in a decreased carrying capacity of sewers due to congealed, cooled grease which coats the inside of the sewer pipes. Once a pipe becomes constricted, the potential for a collection system blockage increases. Collection system blockages may cause sanitary sewer overflows which can potentially degrade the quality of local receiving waters. Grease blockages may also cause sewer back-ups into homes and businesses. The intent of the Grease Trap Specifications is to prevent LUC collection system blockages, obstructions and overflows due to the contribution and accumulation of grease from restaurants, other food service establishments, commercial facilities and industrial facilities.

APPLICABILITY:

City of London, Kentucky Ordinance No. 2011-09, ARTICLE V – POLLUTANT DISCHARGE LIMIT, B. Restricted Discharges, 2 restricts discharges of wastewater containing floatable oils, fats or grease, whether emulsified or not, in excess of one hundred milligrams per liter (100 mg/l) or containing substances which may solidify or become viscous at temperatures 32-150 degrees (0-65 degrees C).

City of London, Kentucky Ordinance No. 2011-09, ARTICLE V – POLLUTANT DISCHARGE LIMIT, D. Grease, Oil and Sand Interceptors specifies the requirements for grease, oil and sand interceptors.

BEST MANAGEMENT PRACTICES:

- Do NOT pour grease, syrup, gravy or other fats, oils and grease into sinks, floor drains, mop sinks, hand sinks or any other indoor drain.
- Manually remove all fats, oils and grease and food residue from dishes, cookware and utensils. Dispose of the food waste in a trash receptacle.
- Use strainers in the sink and floor drains to prevent food particles from entering the sanitary sewer system.

- Inspect grease trap regularly, and be sure it is cleaned out as-necessary.
- Educate employees about these practices and the importance of preventing fats, oil and grease from entering the sanitary sewer system.
- Post "NO GREASE" signs above all kitchen, mop and hand sinks as a reminder to all employees.

REQUIREMENTS:

1. Grease Traps shall be sized as follows:

- A. Buffet and Cafeteria – 1,500 gallons minimum
- B. Institutions (Schools, Hospitals, Jails, etc.) - 2,000 gallons minimum
- C. All others – 1,000 gallons minimum
- D. LUC will review grease trap sizing information received from specific project engineers. LUC will make a decision to approve, or require additional volume, based on the type of food service, the number of fixture units, and additional calculations. Grease trap capacity should not exceed 2,000 gallons for each tank. In the event that the grease interceptor calculated capacity needs to exceed 2,000 gallons, an additional interceptor of the appropriate size shall be installed. If additional interceptors are required, they shall be installed in series.
- E. Grease traps that are installed in series shall be installed in such a manner to ensure positive flow between the tanks at all times. Therefore, tanks shall be installed so that the inlet invert of each successive tank be a minimum of 2 inches below the outlet invert of the preceding tank.
- F. Grease traps interceptors that are installed in series shall include adapters, gaskets or flexible transition couplings of minimum of schedule 40 PVC pipe.

2. Property service connections shall be sized based on fixture units with a minimum size of a 6-inch connection

3. All restaurants, other food service establishments, commercial facilities and industrial facilities that have internal plumbing problems due to lack of grease control equipment and/or undersized grease control equipment and/or grease control equipment that does not meet the current LUC Grease Trap Specifications and/or poorly maintained grease control equipment that result in response by LUC, will be required to install, bring up to code, and/or maintain grease control equipment to meet the requirements of the LUC Grease Trap Specifications.

4. All restaurants, other food service establishments, commercial facilities and industrial facilities that discharge excessive grease to the public sewer due to the absence of grease control equipment or undersized grease control equipment, or grease control equipment that does not meet the current LUC Oil and Grease Guidelines in amounts that cause or contribute to a sanitary sewer overflow, shall install appropriately sized grease control equipment as determined by LUC.

5. All new restaurants, other food service establishments, commercial facilities and industrial facilities shall install a new grease trap which has been approved by the Kentucky Division of Plumbing and LUC. New restaurants, other food service establishments, commercial facilities and industrial facilities shall have separate sanitary (restroom) and kitchen process lines. The kitchen process lines shall be plumbed to appropriately sized grease control equipment. Kitchen process lines and sanitary lines may combine prior to entering the public sewer, however the lines cannot be combined until after the grease trap. Sanitary wastewater, or black water, cannot be connected to grease control equipment.

6. When an existing restaurant, other food service establishment, commercial facility or industrial facility building and/or building's plumbing is being renovated, internal plumbing shall be reconstructed to separate sanitary (restroom) flow from kitchen process flow. Sanitary flow and kitchen process discharges shall be approved separately by LUC and shall discharge from the building separately. The kitchen process line(s) shall be plumbed to appropriately sized grease control equipment. Kitchen process lines and sanitary lines may combine prior to entering the public sewer, however the lines cannot be combined until after the grease trap.

7. New multi-unit facility, or new "strip mall" facility, owners shall contact LUC prior to conducting private plumbing work at the multi-unit facility site. Multi-unit facility owners shall have plans for separate private wastewater lines for kitchen and sanitary wastewater for each "individual" unit. In addition, the plans shall identify "stub out" locations to accommodate appropriately sized grease traps or equivalent device which

has been approved by Kentucky Division of Plumbing and LUC for each unit of the multi-unit facility. New multi-unit facility, or new "strip mall" facility owners shall consider suitable physical property space and sewer gradient that will be conducive to the installation of an exterior, in-ground grease trap when determining the building location.

8. LUC will review plans for restaurant, other food service establishment, commercial facility or industrial facility building.

- A. One set of facility plans shall be submitted to LUC.
- B. LUC will receive, review, deny/approve facility plan.
- C. Facility plans shall include the following sheets: a floor plan detailing kitchen prep equipment and showing how greasy waste lines discharge to grease control equipment, plumbing sheets, and a grease control equipment specification sheets.
- D. Plumbing sheets shall include identification of all cooking and food preparation equipment (i.e. fryers, grills, woks, etc...), the number and size of dishwashers, sinks, floor drains, and other plumbing fixtures, greasy waste bearing plumbing lines the location of grease control equipment, and specifications for grease control equipment to include drawings of the grease control equipment. The discharge from the following fixtures shall be plumbed to the grease control equipment: all sinks (3-compartment, vegetable prep, mop, etc), dishwashers without pre-rinse systems, floor drains in food preparation and storage areas, garbage disposals, and other fixtures through which grease may be discharged such as woks and soup ladles.
- E. LUC will review the plumbing plans and grease control equipment sizing; and approve, or make changes as necessary to aid in the protection of a grease discharge.
- F. Personnel from LUC will inspect the grease control equipment. Contact LUC at least forty-eight (48) hours, working time, prior to installation to schedule the inspection. LUC will not accept grease control equipment that has not been inspected and approved by LUC.

9. Substandard grease control equipment: In the event an existing restaurant, other food service establishment, commercial facility or industrial facility building's grease

control equipment is deemed by LUC to be either undersized or substandard in design, the restaurant, other food service establishment, commercial facility or industrial facility building owner(s) will be notified in writing by LUC of the deficiencies and required improvements, and given a compliance deadline not to exceed six (6) months to comply.

10. Prohibitions: Restaurant, other food service establishment, commercial facility or industrial facility shall not contribute or cause to be contributed into the LUC collection system the following:

- Hot water (in excess of 40° C (104° F)) running continuously through grease control equipment;
- Discharge of concentrated alkaline or acidic solutions into grease control equipment;
- Discharge of concentrated detergents into grease control equipment.

11. Annual Requirements for Grease Traps

- a. Restaurant, other food service establishment, commercial facility or industrial facility under the LUC's jurisdiction will allow access to LUC to inspect grease trap at any time as LUC deems necessary to verify that all necessary components of the grease trap are properly installed and in proper working condition. If a grease trap is not installed correctly or is not in proper working condition, then a corrective action response is required from the restaurant, other food service establishment, commercial facility or industrial facility. Facility owner must correct such deficiencies in a time frame agreed to by LUC.
- b. Restaurant, other food service establishment, commercial facility or industrial facility's with grease control equipment shall maintain a log of the pumping/cleaning maintenance activities performed for each grease control device on the premises. Grease control equipment maintenance records shall include, at a minimum, the date of cleaning/maintenance, company or person conducting the cleaning/maintenance, name and address of restaurant, other food service establishment, commercial facility or industrial facility building, and specific volume of grease wastewater removed from the grease control equipment. Manifests/trip tickets shall be maintained for a period of 3 years to substantiate the maintenance log. However, manifests alone will not meet the requirement.

- c. Grease control equipment maintenance records shall be available at the restaurant, other food service establishment, commercial facility or industrial facility premises so they can be provided to LUC personnel. Grease control equipment maintenance records shall be kept onsite for three (3) years minimum.
- d. An owner, manager or designated employee of the restaurant, other food service establishment, commercial facility or industrial facility shall supervise the grease control equipment cleaning/maintenance activities and shall be physically present and observe the entire operation each time cleaning/maintenance is conducted.
- e. Each grease control device shall be fully evacuated (complete pump out of GI contents) unless the volume is greater than the tank capacity of the pumper vehicle in which case the hauler shall arrange for additional transportation capacity so that the grease control equipment is fully evacuated within a 24 hour period.
- f. The return of gray water back into the grease control equipment from which the waste was removed is prohibited.
- g. Waste removed from grease control equipment shall be disposed of at a facility permitted and authorized to receive such waste in accordance with applicable federal, state and local laws and regulations.

12. Grease Trap Cleaning/Maintenance Requirements

- a. Grease traps shall be cleaned of complete fats, oils, grease and food solids at a minimum of monthly, unless more or less cleaning frequency is authorized by LUC. If the oils, grease and food solids content of the grease trap is greater than 25% of the water depth capacity of the grease trap, then the grease trap shall be cleaned every week, or as frequently as needed to prevent 25% of capacity being occupied with oil, grease, and food solids.

b. During cleaning of the grease trap, the flow restrictor shall be checked to ensure it is attached and operational.

c. Grease Trap waste shall be sealed or placed in a container to prevent leachate from leaking, and then disposed.

d. Grease Trap waste shall not be mixed with yellow grease in the grease recycle container.

13. "Additives" are prohibited for use as grease management and control

a. Additives include, but are not limited to, products that contain solvents, emulsifiers, surfactants, caustics, acids, enzymes and bacteria.

b. If LUC identifies a facility is using "additives" and is contributing oil and grease to the LUC sewer system, or has caused any interference to the sewer system, the facility shall immediately stop use of the "additive".

c. At no time shall additives be used just prior to under the sink or floor grease traps.

d. The use of additives is prohibited with the following exceptions:

1. Additives may be used to clean drain lines but only in such quantities that it will not cause fats, oils and grease to be discharged to the sewer system, or cause temporary breakdown of oil and grease that will later re-congeal in the downstream sewer system.

2. If the product used can be proven to contain 100% bacteria, with no other additives, approval of the use of the product must come from LUC, and the facility must submit a full disclosure Material Safety Data Sheet and certified sample results from the manufacturer of the product.

e. The use of approved additives shall in no way be considered as a substitution to the maintenance procedures required per this policy.

14. Right of Entry – Inspection and Monitoring

- a. LUC shall have the right to enter the premises of facility's to determine whether the facility is complying with the requirements of this policy and/or applicable Wastewater Regulations. Facility's shall allow LUC personnel, upon presentation of proper credentials, full access to all parts of the premises for the purpose of inspection, monitoring, and/or records. Unreasonable delays in allowing LUC personnel access to the premises shall be a violation of this policy and applicable Wastewater Regulations.

- b. LUC may require that the facility install monitoring or additional pretreatment equipment deemed necessary for compliance with this policy and/or applicable Wastewater Regulations.

15. Enforcement Action

- A. Enforcement action may result against a facility for instances that include, but is not limited to, failure to clean or pump grease control equipment, failure to maintain grease control equipment including inspection and installation of properly functioning effluent tees and baffles, failure to install grease control equipment, failure to control oil and grease discharge, contributing to a sewer line blockage or obstruction, contributing to a sanitary sewer overflow, and use of additives in such quantities so that oil and grease is pushed downstream of the facility. Enforcement actions will be based on applicable regulations.

Grease Trap Specifications:

1. Concrete - 4,500 PSI @ 28 days
2. Rebar - ASTM A615 Grade 60
3. Mesh - ASTM A185 Grade 65
4. Design - AC1318 - 83 Building Code, ASTM C890, ASTM C1227 and ACI 318
5. ASTM C - 857 Minimum Structural Design
6. Loading for Underground Precast Concrete Utility Structures
7. Live Loads - A-20 (AASHTO HS25)
8. Fill w/Clean Water Prior to Startup of System
9. Install Dual Sweep Cleanouts within 6' of both the inlet and outlet of Grease Trap
10. Size of grease trap will be determined on type and volume of proposed use and shall be approved by London Utility Commission. Minimum grease trap sizes are:
 - Institutions (schools, hospitals, jails, etc.) is 2000 gallons
 - Buffets, cafeterias, etc. is 1500 gallons
 - All restaurants and other food services is 1000 gallons
11. Place Conseal CS 120 1" x 1" butyl mastic sealant between joints
12. Install all plumbing as shown in appropriate detail(s)
13. Grout all joints inside and outside of grease trap
14. Use non-shrink grout around inlet and outlet pipes
15. Coat entire exterior of grease trap with a bituminous foundation coating and allow to dry before backfilling
16. Set grease trap on KY No. 57 or smaller crushed stone. minimum of 8 inches thick
17. London Utility Commission shall be provided with shop drawings for all grease traps
18. Grease traps shall be accessible for maintenance and/or inspection with covers and cleanouts at grade. Inspection plates / access hatches shall have a minimum opening of 21" in any dimension. Such covers shall be gas tight.
19. Grease traps and associated appurtenances shall be installed in excavations having 12" (minimum) clearance
20. Grease traps shall be protected from vehicular traffic
21. Flow to grease trap shall exclude sanitary sewage and surface drainage
22. Design and capacity of grease trap shall be certified by an licensed professional engineer in accordance with Kentucky State Plumbing Code
24. Inlet piping, outlet piping, and Grease Trap interior piping shall be 4" minimum diameter. Clean-outs shall be bi-directional tee with tee and all piping to the top of ground 6" minimum diameter.
25. Maximum cover over Grease Trap - 36"
26. Installation shall conform to OSHA specifications



GREASE TRAP NOTES

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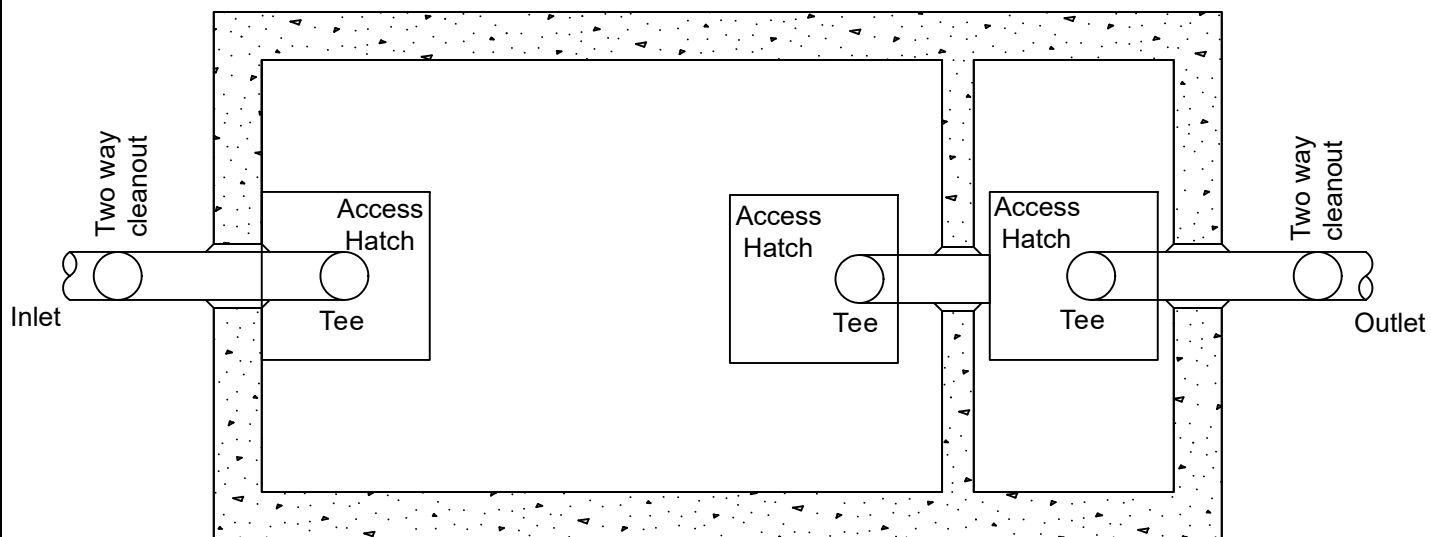
Engineer • Surveyor • Project Manager

1005 West 5th Street, P.O. Box 1169, London, Kentucky 40743-1169

email kenwilsonpe@windstream.net

Telephone (606) 862-7612

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Inside piping, except cleanouts, shall be 4" diameter (minimum)

Cleanouts shall be bi-directional tee, 6" diameter (minimum)
from tee to top of ground surface.



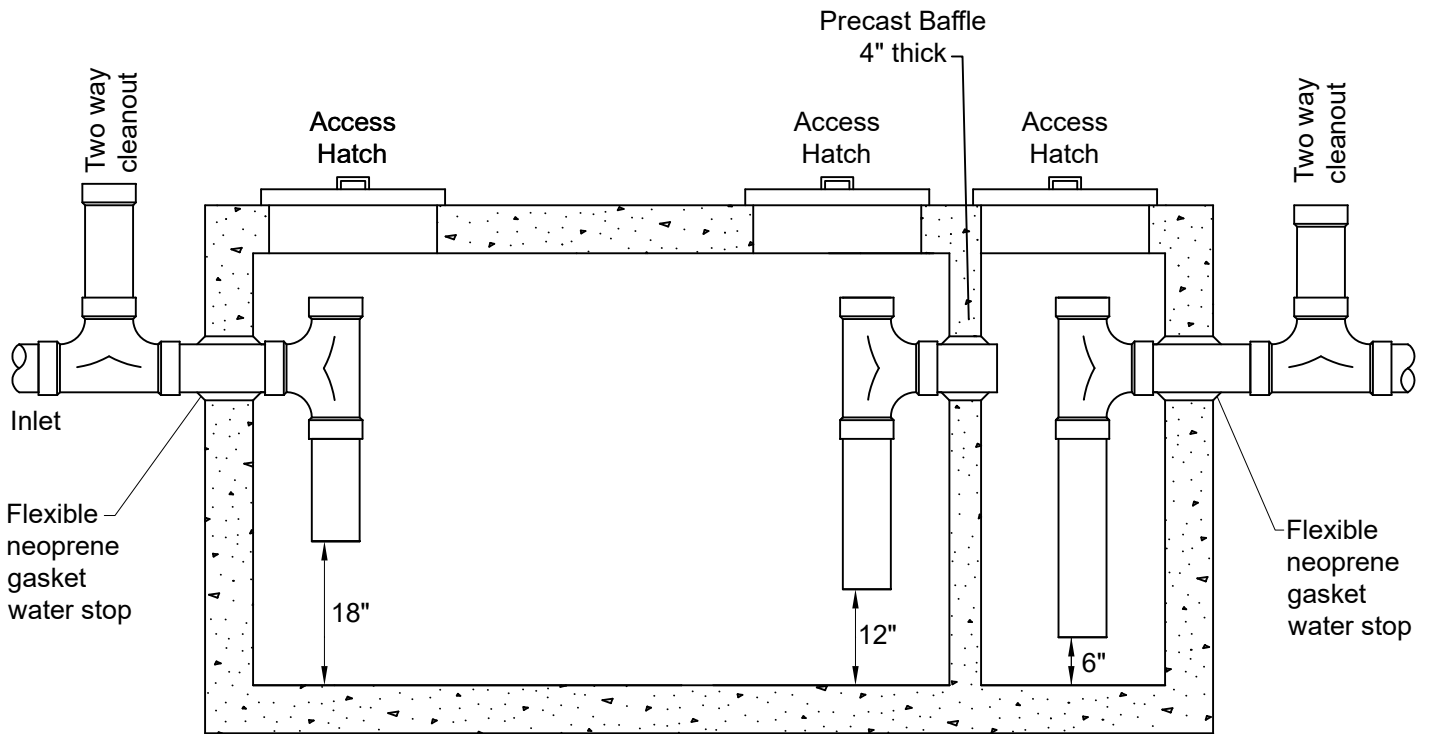
**GREASE TRAP
PLAN**

Wm Kenneth Wilson

Engineer • Surveyor • Project Manager

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email kenwilsonpe@windstream.net
Telephone (606) 862-7612

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from tee to top of ground surface.



**GREASE TRAP
SECTION**

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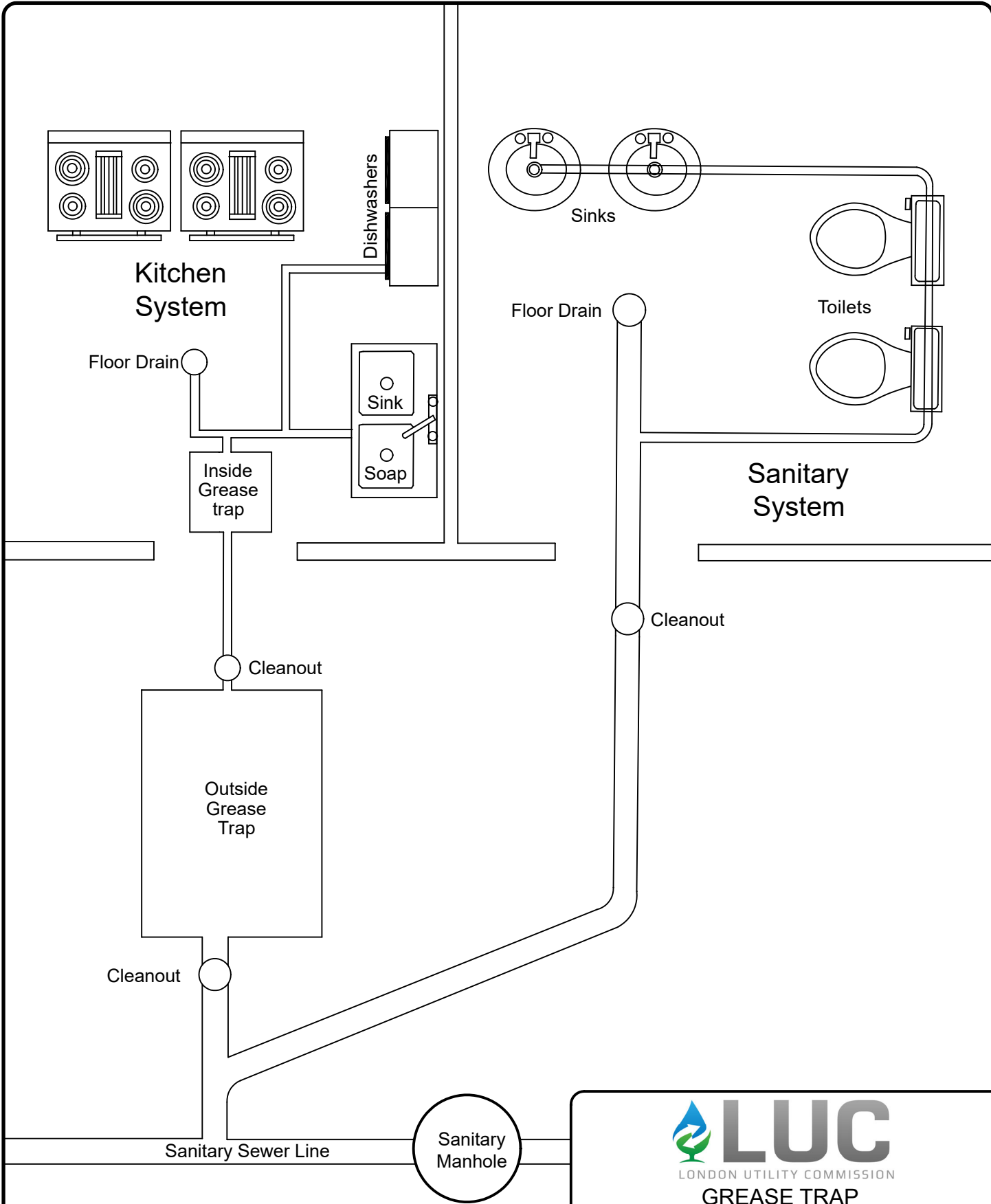
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**GREASE TRAP
SCHEMATIC INSTALLATION**

Wm Kenneth Wilson
Engineer • Surveyor • Project Manager

1005 West 5th Street, P.O. Box 1169, London, Kentucky 40743-1169
 email kenwilsonpe@windstream.net
 Telephone (606) 862-7612

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