LUC

LONDON UTILITY COMMISSION

Oil / Water Separator

Specifications

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APPLICABILITY:

City of London, Kentucky Ordinance No. 2011-09, ARTICLE V – POLLUTANT DISCHARGE LIMIT, B. Restricted Discharges, 1 restricts discharges of wastewater containing more than 25 milligrams per liter of petroleum oil, non-biodegradable cutting oils, or products of mineral oil origin.

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.

WHAT FACILITIES NEED OIL/WATER SEPARATORS?

- Quick lube stations
- Transportation fueling stations
- Transportation cleaning facilities (car washes / truck washes)
- Vehicle / heavy equipment maintenance and repair
- Railroads
- Military installations
- Airports
- Parking lots
- Petroleum handling facilities (refining and storage)
- Businesses using steam or pressure washers
- Fire stations where fire trucks are washed
- Other applicable facilities per City of London, Kentucky Ordinance No. 2011-09

WHAT ARE OIL/WATER SEPARATORS?

Oil/water separators are devices used to remove oil and other petroleum products from industrial wastewater and/or storm water systems.

HOW DO OIL/WATER SEPARATORS WORK?

Gravity oil/water separators systems are based primarily on the relatively low solubility of petroleum products in water and the difference between the specific gravity of water and the specific gravities of petroleum compounds.

Oily wastewater influent enters the inlet of the separator. Water turbulence is stabilized by the first baffle and solids are settled and accumulated as sludge in the bottom of the separator. As the wastewater flows to the second chamber located at the center of the separator, oil droplets rise to the top of the water and are prevented from exiting by a second baffle. Thus, solid sludges heavier than water can be collected and oil droplets lighter than water can be accumulated on top of the wastewater and routed to a holding chamber or tank.

Gravity oil/water separators are not designed to separate other products such as solvents, detergents, or metals. Misuse of these systems can upset treatment plants, cause discharge permit violations, increase sludge disposal costs and/or eliminate beneficial reuse of wastewater or sludge.

WHAT SHOULD NOT GO THROUGH AN OIL/WATER SEPARATOR?

- Antifreeze, de-greasers. and detergents. They will emulsify oil into small droplets, preventing the oil from floating to the surface.
- Fuels, alcohols, or solvents. They not only can emulsify the oil, but their vapors can pose a threat to line workers at the pump stations or treatment plant.
- Concentrated amounts of oily products. They can overload the baffles or plates and pass through to the sewer.
- ANY emulsifiers. The smaller capacity of coalescing units may have more turbulent flows. This "flushing" action, combined with a concentration of any emulsifier, can wash off the residual oils clinging to plates and release large amounts of emulsified oils to the sewer.
- ANY metal, plating, finishing, or metal recovery water. Oil/water separators are not designed to treat heavy metal-bearing wastewater. This type of discharge will require chemical treatment or special equipment for acceptable discharge. Examples of heavy-metal bearing wastewater are:
    - Hot tank and cabinet washer solutions from auto repair or machine shops.
    - Pressure-wash water.
    - Water-soluble machine coolant.

OPERATION AND MAINTENANCE

The ability of oil/water separators to function properly depends upon routine service and maintenance. Operators need to understand the separation process and the components of the specific oil/water separator under their responsibility. The operator should make frequent inspections of all parts of the separator and its draining system to prevent failures caused by operations, breaks, and mechanical settings. The operator must also be familiar with the capacity of the separator and holding tanks, uses of the system, and its potential misuses to be able to determine periodic draining and cleaning requirements.

Maintaining an Oil/Water Separator

- Recommended inspection frequency: at least every 30 days.

- Save maintenance costs by diverting oils and sludge out of the separator. The sooner the oils are removed, the less the chance they will become emulsified. Oils that are free-floating can be carefully vacuumed off with a wet/dry vacuum. This oil should be stored in a separate drum for proper disposal.

- Oil may also be removed by use of absorbent pads. These float on top of the water and attract only the oil. The pads should be placed in the inlet chamber to trap the oils before they get a chance to migrate. Pads should be checked often so they do not become saturated. These pads can be wrung out and reused if handled properly.

- Sludges (caked-on grease and oily dirt buildup on the bottom of the separator) are expensive to dispose of and difficult to clean out. A catch basin installed before the separator, can be shoveled out and will trap solids before they wash into the separator. This can be very helpful to facilities cleaning muddy equipment.

- The sludge should be collected in a drum and tested to determine proper disposal methods.

Sludge Disposal

- Bulk liquid-sludge should be shipped to a licensed treatment facility where oils, solids, and heavy metals are separated from the water. Treated water then goes to the sewer.

- Septic tank services should NEVER be used to clean an oil/water separator or catch basin.

OIL/WATER SEPARATOR SPECIFICATIONS

1) Shall be Zurn Z1186-ST-E or Zurn Z1188-ST-E or equivalent acceptable to London Utility Commission per the attached drawings.

2) Shall be appropriately sized, minimum design flow = 50 gpm.

3) Shall have water acid resistant interior and exterior.

4) Shall have bronze clean out plug(s).

5) Shall have visible double-wall trap seal(s).

6) Shall have combination pressure equalizing / flow diffusing baffle(s).

7) Shall have adjustable oil drawoff.

8) Shall have vents connected either side.

9) Shall be regularly furnished with inlet and outlet in high position.

10) Shall be provided extensions as required.

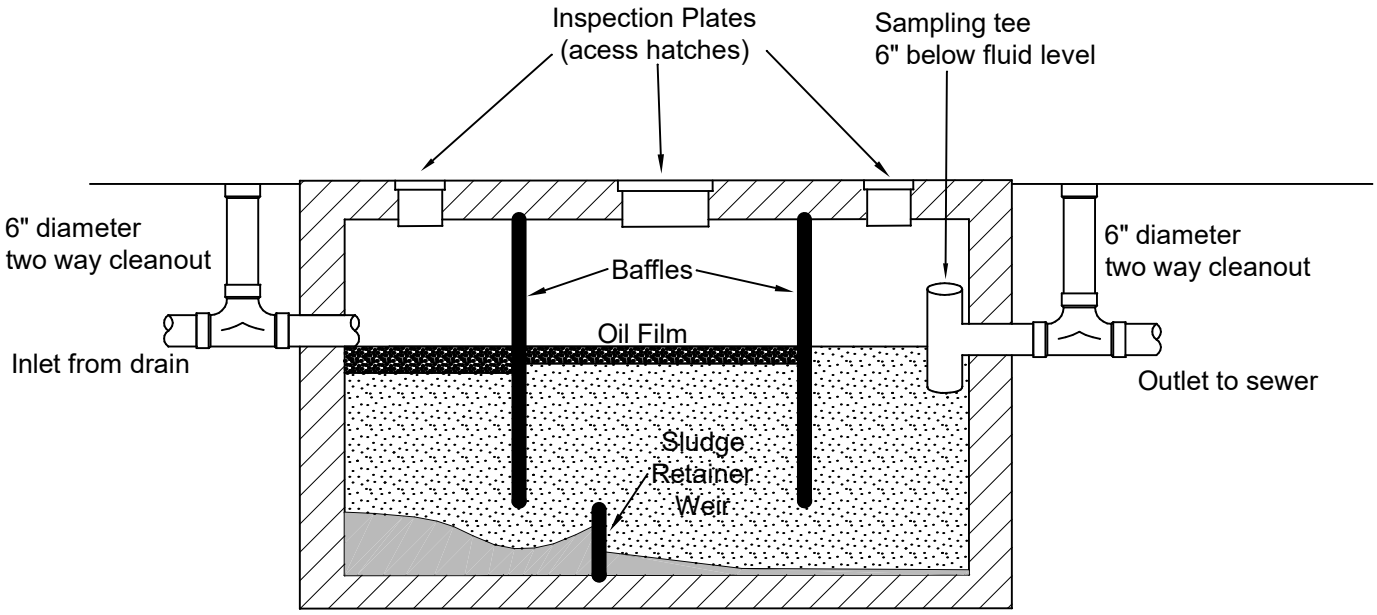
11) Shall be provided with inspection plates / access hatches having a minimum opening of 21" in any dimension.

OIL/WATER SEPARATOR INSTALLATION

Install the interceptor as close as practical to the fixture or fixtures being serviced on the exterior of the building.

Allow sufficient clearance for removal of the interceptor cover for cleaning.

Take into consideration the placement of the flow control fitting and ventilation requirements.



NOTES:

1) Oil / Water Separator shall be Zurn Z1186-ST-E or Zurn Z1188-ST-E or equivalent accptable to London Utility Commission.

2) Oil / Water Seperator shall be designed for a minimum flow of 50 gpm.

3) Inspection plates / access hatches shall have a mimimum opening of 21" in any dimension.

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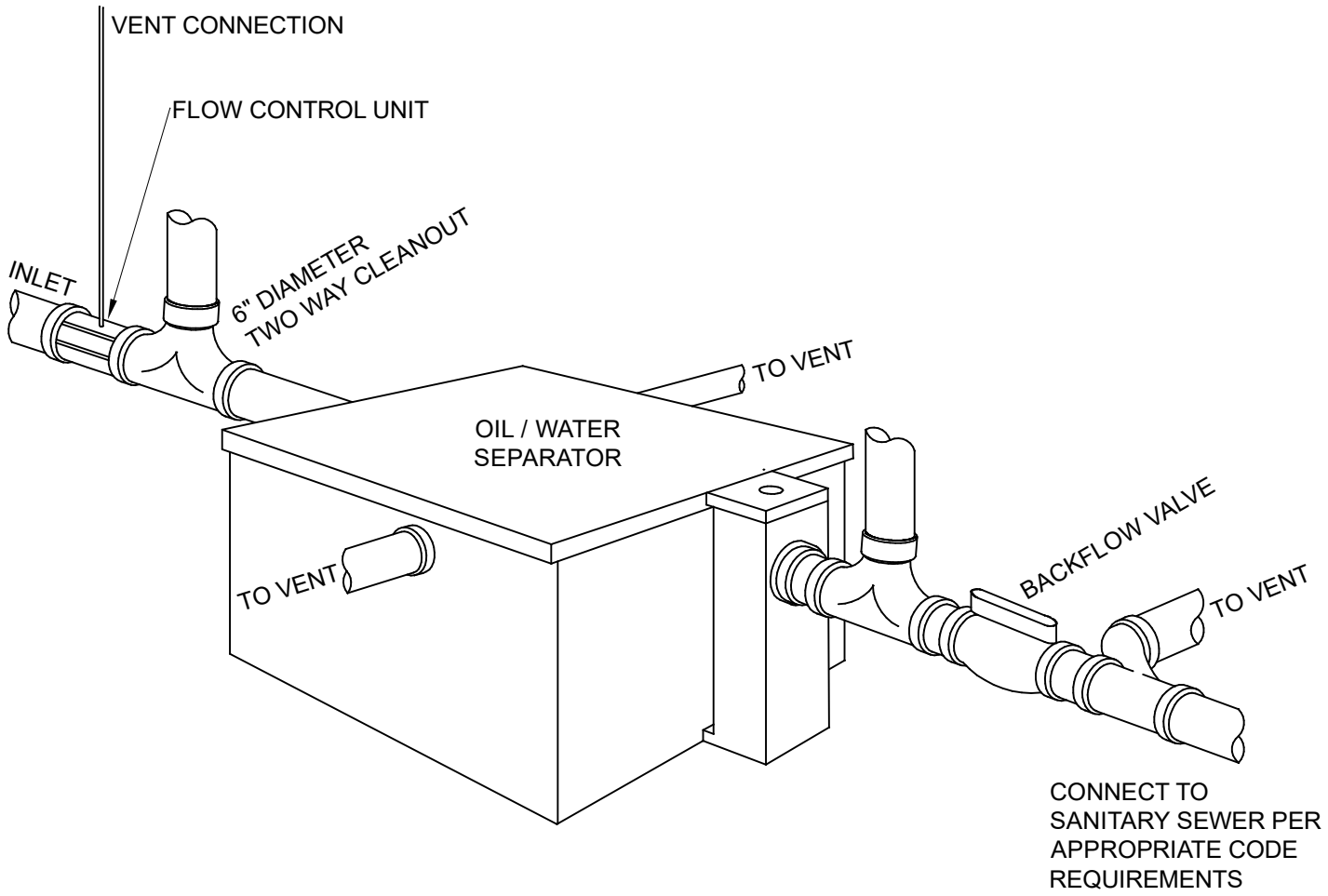

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OIL / WATER SEPARATOR SCHEMATIC INSTALLATION

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