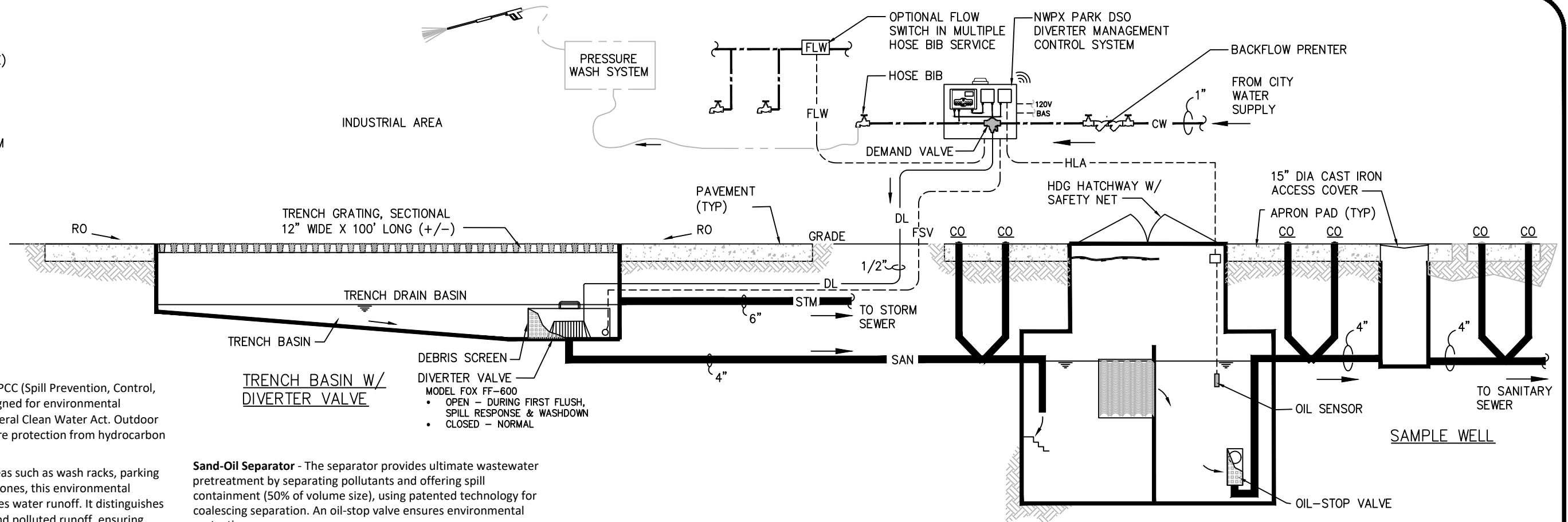


- LEGEND
CW – CITY WATER (POTABLE)
SAN – SANITARY LINE
STM – STORM LINE
RO – RUNOFF
DL – DRIVE LINE
CO – CLEAN OUT
HLA – HIGH OIL LEVEL ALARM
FSV – FLOAT SENSOR (DIV)
FLW – FLOW SWITCH (OPT)
BAS – BUILDING AUTOMATION



General Information

The NWPX Park Model DSO is an SPCC (Spill Prevention, Control, and Countermeasure) system designed for environmental protection as mandated by the federal Clean Water Act. Outdoor areas, exposed to rainwater, require protection from hydrocarbon spills and even trace amounts.

Designed for unroofed outdoor areas such as wash racks, parking lots, loading docks, and industrial zones, this environmental control system intelligently manages water runoff. It distinguishes between uncontaminated water and polluted runoff, ensuring appropriate direction into either sanitary or stormwater sewers.

Small spills or trace-laden wastewater are typically pre-treated with a sand-oil separator and then discharged into the city's sanitary sewer. Large spills are also captured and treated in the separator to remove solids and hydrocarbons before discharge.

Since these areas are uncovered, there's a risk of rainwater entering the sanitary sewer system, which is prohibited by local ordinances and plumbing codes due to potential adverse effects on the city's WWTP.

The DSO system provides environmental protection against:

First flush, vehicle leaks, and trace pollution from normal equipment and maintenance activities, treating and capturing them while allowing precipitation runoff to be diverted to the storm sewer.

Accidental spills of fuel and other hydrocarbons are separated from water and retained, allowing cleaner wastewater to proceed to the sanitary sewer.

Routine vehicle and pavement washdown activities result in pollutants being separated and retained, with cleaner wastewater directed to the sanitary sewer.

System Components

Trench Drain - The trench drain system ensures the capture of all area drainage runoff. The trench basin, constructed from heavy-duty steel with an integral frame, is designed with the necessary slope. It's equipped with traffic-duty, ductile iron sectional grating that is removable for easy trench inspection and cleaning.

Diversion Valve - A hydraulically activated diverter valve offers reliable intrinsic safe diversion of runoff. This diverter valve is listed with Uniform Plumbing Code (UPC) and manufactured by FOX Environmental Model FF-600 and is located within the trench basin.

Sand-Oil Separator - The separator provides ultimate wastewater pretreatment by separating pollutants and offering spill containment (50% of volume size), using patented technology for coalescing separation. An oil-stop valve ensures environmental protection.

Sample Well - The sample well serves as the final step for diverted wastewater, channeling it through a structure designed for easy system performance inspections and water sampling.

Control System - The DSO control system acts as the central intelligence for continuous management, featuring monitoring and alerts for collected oils in the separator. It also operates the flush sequence, spill response, and wash cycle operations, ensuring efficient and responsive control over the system's functionalities.

How It Works:

First Flush Volume (FFV)

The First Flush Volume (FFV) is calculated by determining the amount of wastewater generated from the initial storm runoff. This calculation involves taking the area of the pavement surface and multiplying it by a depth of 1/2 inch. This method helps in understanding the quantity of runoff that needs to be managed to mitigate pollution effectively.

First Flush Sequence (FFS)

The DSO control system's First Flush Sequence (FFS) enables the discharge of the First Flush Volume (FFV). A hydraulically activated diverter valve, protected by a debris screen and compliant with the Uniform Plumbing Code (UPC), is located within the trench basin. Upon activation, this valve directs the wastewater into a Sand-Oil Separator, removing and detaining hydrocarbons and fine solids before releasing the pretreated wastewater to the sanitary sewer.

Normal Operation (Dry Day)

During dry days when the protected area is in normal use, the trench drain collects any incidental moisture, small amounts of rainwater, or minor spills. The diverter valve remains CLOSED. Once daily, the system automatically initiates the First Flush Sequence (FFS), OPENING the diverter valve to allow drainage of the FFV into the separator and then to the sanitary sewer.

Normal Operation (Wet Day)

On wet days, small spills that may have accumulated in the trench, along with rainwater, start to fill the trench, activating the system's automatic control. The float sensor triggers the diverter valve to begin the First Flush Sequence (FFS), directing the FFV to the Separator for hydrocarbon and fine solid removal. The pretreated wastewater exits to the sanitary sewer. After releasing the FFV, the diverter valve CLOSES. The remaining diluted and cleaner water is considered acceptable for discharge to the storm sewer as it rises to the stormwater discharge line level and exits the trench.

Spill Activation

In the event of a spill, the system includes a manual emergency override button that activates the diversion valve to OPEN, allowing all liquids from the trench to be drained into the separator. The diverter valve will stay in this position until manually reset, then CLOSES. Removal of captured spill materials from the separator, in compliance with regulations, is recommended for optimal environmental safety.

Wash Operation in Use

The NWPX Park Model DSO is specially designed for use with unroofed wash areas, ensuring compliance with municipal sewer codes. During wash operations of outdoor areas, vehicles, or equipment, all wash water is channeled into the trench drain basin. The system automatically activates upon detecting potable water usage from hose bib(s) in the protected area. The wastewater then passes through a debris screen, capturing coarse solids. The diverter valve is OPENED during washing activities, directing wastewater into a Sand-Oil Separator for the removal and detainment of hydrocarbons and fine solids before the pretreated wastewater is discharged into the sanitary sewer. After wash operations conclude, the system triggers the First Flush Sequence (FFS) to drain any remaining surface water and then CLOSES.

INDUSTRIAL SPCC SYSTEM

Applications:

- Fuel loading racks
- Gas stations & fueling pads
- Aircraft fueling aprons
- Vehicle & equipment wash bays
- Truck & bus maintenance yards
- Rail yards
- Marinas & boat washdowns
- Chemical loading/unloading areas
- Tank farms & bulk storage terminals
- Dumpster & trash compactor areas
- Recycling & scrap metal facilities
- Fire station wash racks
- Military washdown/decon areas
- Mining equipment wash areas
- Power plant transformer containment areas
- Industrial process washdown pads
- Airport deicing pads
- Emergency hazmat response areas
- Oil & gas drilling sites

NWPX Park Model DSO Spill Control and Countermeasures System:

Efficient Water Runoff Management - Elevate your environmental protection with the NWPX Park Model DSO, the ultimate SPCC system for outdoor areas. Perfect for parking lots, loading docks, and industrial zones, it smartly manages water runoff, ensuring only clean water makes its way into sewers.

Features:

- Trench Drain
- 3-Way Flow Diversion Operation (Sanitary Sewer or Storm Sewer)
- Sand-Oil Separator
- Sample Well
- Control System

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PROJECT: .			
CUSTOMER: .			
ENGINEER: .			
ORDER #: .			
PROJECT #: .		LOCATION: .	
DATE: .			
INDUSTRIAL SPCC SYSTEM SPILL CONTROL & COUNTERMEASURES			
PM	ENV	ENG	DWG. NO.
DATE	03/27/26	CE	DSO-S-1200-SPC-FF3-06-RT
			REV.
			A

DSO-S-1200-SPC-FF3-06-RT