Canada's First ecoStop is Installed in Fort Erie, Ontario

CON CAST PIPE

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Con Cast Pipe

Oil and gasoline spills into storm sewers and open drainage courses are unacceptable. To receive approvals for industrial and commercial developments, land developers and landowners have to be aware of the immediate and any future impacts that their projects may have on the natural environment. Litigation might follow a serious uncontained spill that could cost the company or person responsible a small fortune, as well as incarceration in most serious offences.

A growing awareness of the value of our natural environment, and stiff legislation that deals with polluters, have turned many proponents of developments to technology to help secure approvals and avoid litigation in the event of an accidental spill. Fueling stations are prime candidates for applications of new technology to contain petroleum spills, and the long-term collection of oil from leaking vehicles. Such a facility is the Fort Erie Truck and Travel Plaza.

The consulting engineering firm of AWS Engineers and Planners Corp. of Beamsville recommended the use of ecoStop technology supplied by Royal Environmental Systems, Inc. after discussions with engineers at Con Cast Pipe. The project engineer, John Conlin, who was adamant about using spill control technology, favoured ecoStop. It has the ability to shut itself off automatically and stop any oil or gasoline from entering the storm sewer in the event of a catastrophic spill. The shut-off valve operates mechanically. No external energy supply is required, there are no electrical parts, and retrofitting existing concrete separators or manholes is easy. It is not designed to remove sediment from runoff. Says John Conlin of AWS, "I chose the product because it would serve the purpose, and the documentation provided was satisfactory. We will monitor the performance of the product over the next year. We would be happy to participate with Con Cast Pipe in evaluating the product's performance and to advise them of any recommendations we may have."

The below grade petroleum spill control system is used for any facility or site where the potential for a petroleum spill exists. It has a valve at the inlet that will automatically close whenever the volume of floatable materials (oil, gasoline, diesel fuel) exceeds the rated capacity of the retention tank. It is an ideal spill control for point sources such as gasoline stations and other fueling facilities, electrical transformers, generators, oil storage areas, and transportation fueling systems. In the event of fuel splashes or malfunctions during underground fuel storage refilling, the spilled material would be contained by the system.

In Fort Erie, the intake structure to the ecoStop is a catchbasin located under the canopy of the fueling station in a position where only a limited amount of rainwater and snowmelt can enter the storm sewer. Water and petroleum pollutants flow into the catchbasin, then to the structure by pipe. Entering the structure, the influent settles out with oil on top. A "teed" PVC outlet allows water separated from oil to discharge from the structure into the storm sewer. As the container fills, the float mechanism would signal an alarm as the influent valve closes and the layer of oil reaches a predetermined depth. At this point, signaled by either an alarm in the attendant's office, or the obvious back up of runoff from the catchbasin, a response team would be called to remove the oil in the tank, or clean up a localized spill. At the Truck and Travel Plaza, the backup of runoff from the catchbasin would signal the alarm.

An ecoStop system is easy to assemble and install. Designed for flow rates of 3 L/second, the 1,150 litre Truck and Travel Plaza structure is comprised of standard 1200 mm diameter manhole components including a monolithic base, riser and flat cap. The inside surface of the manhole components are coated with an epoxy which reinforces the hard durable surface of the precast structure. Buna nitrile rubber compound boots are used to connect the influent and discharge pipes to the manhole. This material is resistant to the corrosive materials that may enter the system. Gaskets between manhole sections are also buna nitrile. The spill control equipment must be absolutely watertight. Every shut-off valve is tested at a pressure of 50 kPa, or 4.8 metres of total dynamic head.

Designed with future standards in mind, ecoStop far exceeds the tough European standards (DIN 1999 and EN858). Manufacturers note that these structures can be designed to hold 30,000 litres with a flow capacity of 70 L/second.

The valve and float are made primarily of stainless steel. Pipe used for the influent and effluent is made of PVC products, and the stainless steel components are manufactured specifically for the requirements of the fueling station. The housing for the components is bolted onto the wall of the manhole component prior to shipment to the site. The ready-for-installation manhole components arrive on site ready for assembly by the contractor, complete with an assembly sketch. The contractor

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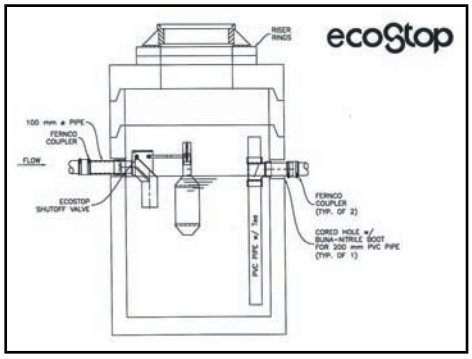
installs the manhole, connects it to the inflow and discharge pipes and makes final adjustments to the float.

The Fort Erie Truck and Travel Plaza, located at the intersection of the QEW Highway and Gilmore Road, is an example of new development that has maximized the use of technology to mitigate the impact of potential small-scale spills. The ecoStop system was included in the servicing design to accommodate the operation of an environmentally responsible refueling facility. In Ontario and other provinces, we can expect to see the application of products specially designed to improving the quality of storm water and snowmelt.



Con Cast Pipe is a major producer of precast concrete sewer and drainage products supplying the Southern Ontario market. The company prides itself on client relations, product quality, and the introduction of innovative products and new technology to contractors and consulting engineers. Royal Environmental Systems, Inc. of Stacy, Minnesota distributes the ecoStop hardware, developed in Austria.