



EnviroEye™ Drain Guard System for External Floating Roof Storage Tanks and Diked Areas

Automated Proactive Control and Monitoring

Addressing the Need for a Drain Guard System

External Floating Roof (EFR) tanks roof drain lines must be constantly monitored by terminal personnel during rain events to prevent overaccumulation of water on the roof and to ensure that storm water runoff does not contain hazardous substances. EFR operators are challenged with managing the possibility of drain line failures introducing hydrocarbons into the discharge. Controlling storm water discharge and preventing product loss/release requires continuous monitoring .

EnviroEye™ has introduced the Drain Guard System (DGS) for EFR tanks and dike outfalls. This patent-pending technology detects hydrocarbon contamination in storm water discharge. If hydrocarbon is present in the discharge, the DGS will immediately close the drain line valves and simultaneously send a message via text and/or other alerts that the system has activated. This capability allows managers and operators to leave roof drain valves open for constant draining, which reduces the possibility of sunken roofs.

Some operations require the use of an EFR as opposed to cone roof or geodesic dome that might have an internal floater. DGS technology, initially intended for EFRs, can handle the head pressure of an above ground storage tank and does not require submerged sensors or equipment to operate. The DGS helps avoid downstream fouling. Your DGS will activate immediately in alarm condition and is not subject to the time lag of other solutions. The DGS automates management of open roof floating tank drains and enables early detection of scale in the discharge, helping avoid costly failures. The DGS has proven itself, notably at a Florida installation, and has given the operator an ROI by preventing disruption to operation and product delivery.

Problem Scenarios for EFR Operators

Problems facing EFR operators include drain failure leading to product loss permit violations, unwanted media attention, tank failures, and extended down time, which result in loss of facility revenue. The EnviroEye™ DGS was created from an owner/operators' need to tackle these and other potential safety hazards which can arise at any above ground storage tank facility.

Operation protocols for issues such as bad weather and heavy rains usually require extended personnel man hours - operators would need to be onsite, sometimes after regular hours, to open and close drain valves according to rain fall severity. This poses potential risks to the various personnel responsible for system management. Operators are challenged whether to leave the roof drain valves open or closed. If they are open during a light or torrential rain event, all water immediately drains from the roof through and out of the tank. If the roof drain line fails, stored product would drain through the line introducing pollutants into the discharge and dike.

In a storm an operator must be sure the valve is properly positioned, often the drain line valve must be opened. If the line has a problem during a storm event, the operator is not likely to see it. Sending personnel to examine drain discharge during a rainstorm introduces health and safety hazards. If excess rainwater accumulates on the roof, a loss of buoyancy may occur causing the tank roof to sink and potentially damaging the tank. The DGS empowers operators to avoid these and other potential safety risks by leaving the valve open as the default setting.

EnviroEye™ Drain Guard System – The EFR Solution

The Drain Guard System by EnviroEye™ utilizes a UV-Fluorosensor, manufactured by Slick Sleuth®, to monitor and detect product escaping through the roof drain. This detection sensor is mounted at the flow chamber discharge. A motor-controlled valve placed at the flow chamber inlet is activated by the sensor when hydrocarbon is detected. The sensor sensitivity configuration creates a detection baseline for closing the roof drain. The sensor works in wet or dry; a baffle system slows the water enough so that entrained product can rise to the surface.

Alerts for notification of system activation may be sent in various ways, such as audio or visual alarms, or even a text message to key personnel. Additional protection may be added using a second motor control valve at the discharge, preventing remaining product in the chamber from escaping. This feature allows the terminal employees to focus on other regular preventative maintenance tasks. In a typical storm, personnel would investigate the situation as soon as possible. However, in the event of a torrential storm, visual examination of these systems might be delayed. Bypass valves enhance DGS protection of assets.

The EnviroEye™ DGS offers additional monitoring features to detect potential failures. Magnets can detect drain line corrosion by capturing scale for analysis. If a line weep is detected, diapers can be installed to trap small amounts of product for examination. This preventative monitoring is an inexpensive way to avoid costly disruptions to tank operation. The DGS improves discovery of potential failure to determine if the tank needs closer inspection or might need to be put into an earlier rotation for its API 653 inspection. The drain guard system is designed to activate immediately upon detection of drain line failure. With configurable settings for when to close drain valves and ability (using diapers) to absorb small amounts of hydrocarbon contamination, the DGS helps keep the tank in service until maintenance can be scheduled. These systems are available in standard configurations or may be built to satisfy specific site requirements.

The Drain Guard System can simplify and automate monitoring/control of other areas that must manage rainwater runoff, especially secondary containment such as dike outfalls. The DGS becomes the last 'eyes' on any runoff before it leaves the facility. With the DGS, operators can be confident that product contaminated water is not exiting their terminal. Terminal owners who weigh the costs of product loss, environmental contamination and remediation, potential storm damage to tanks, along with associated disruption to revenue stream recognize the benefit of installing the DGS.

Conclusion

The EnviroEye™ Drain Guard System's patent-pending technology automates monitoring and control of your roof and dike drain discharge. Designed to operate within hazardous locations, the DGS reduces maintenance and monitoring costs. The DGS can be installed and configured with no service interruptions. The EnviroEye™ DGS adds a level of insurance for your facility operation, giving operators and safety managers confidence that the facility is never disrupted by catastrophic drain line failures.

Drain Guard System by EnviroEye™ is always on duty.

Please visit our website or contact us for more information:

Operator stories: http://enviroeye.net/?page_id=2

Contact: Michael Sprung; michael.sprung@enviroeye.net

713-627-1700 extension 103

