Innovative Solutions for Clean Water

OPERATION AND MAINTENANCE

With regular maintenance and care, your Safe Drain® will continue protecting the environment for decades to come.

THE KEY TO DECADES OF SAFE DRAIN SERVICE

Regular Cycling of Valve

The Safe Drain valve must be cycled (opened and closed) on a monthly basis to ensure proper working order. In addition to cycling the valve mechanismm, the valves must be replaced after any corrosive materials are introduced into the Safe Drain basin. Please contact your Safe Drain representative for more information.

Field Service Procedures Overview

Safe Drain provides products and services designed to allow for compliance with Federal, State and local storm water regulations. The success of our products relies on proper and timely maintenance and the following service procedures are designed to ensure trouble free operation. It is imperative that these procedures be adhered to. The procedures are structured as follows:

1. Site Evaluation
2. Work Exclusion Zone
3. Safe Drain Unit Initial Inspection
4. Safe Drain Cleaning
5. Filter Maintenance
6. Disposal of Cleaning Water
7. Safe Drain Post Cleaning Inspection
8. Safe Drain Identification Maintenance
9. Safe Drain Field Service Documentation

1. Site Evaluation

Field Service personnel must inspect the customer's site upon arrival and prior to commencement of servicing activities. Review of the site conditions allows field service personnel to determine if there have been operational changes or other activities that may have impacted the storm drain system. This can include, but is not limited to; trash, sediment, chemical or debris flows that have collected in or around the storm drain inlets. All findings must be documented on the Field Service Report (FSR). Capturing this information within the report allows us to better serve our customers by keeping them informed of activities that might need correction or monitoring.

Things to look for and document are as follows:

Trash Debris – Styrofoam, paper products, cigarette butts, plastics, general litter
Organic Debris – leaves, wood, plant matter, food items
Sediment – sand, silt, clay, dirt, soil
Chemicals* – other than oil (based on Spilfyter® strips)
Oil
Metallic – filings, metal chips, polishing dusts, corrosion by products, zinc
Nutrients – nitrogen, phosphorus, potassium (NPK) from fertilizers

* *If a chemical spill or evidence of a chemical spill is suspected, do not attempt to clean up the spill, notify the customer immediately and also report to the home office.*

After evaluating the site, establish a work exclusion zone. Ensure that the area where work is to be performed will not interfere with the customer's operations. Work must be coordinated with the customer.

2. Work Exclusion Zone

The work exclusion zone allows for protection of the field service personnel, customers and customer's clients. When possible, forward an advanced work plan for servicing activities to the customer representative for posting at the appropriate site locations. This will allow work to proceed without impacting customer operations and hopefully prevent drains from being obstructed by vehicles.

Cordon off an area that allows for sufficient working room for all activities. This should include the following when practical:

Safety Cones – orange cones at perimeter of work zone
Barricade Tape – tape will be yellow "Caution" tape strung from cone to cone or to other objects that facilitate the establishment of the exclusion zone
Tarps – use tarps to protect customer property from overspray from cleaning activities
Hot Work Signage – in the event that grinding is required, a high contrast yellow and black lettered sign with the words "Caution – Hot Work in Progress" shall be posted at all potential entrances to the work exclusion zone.

Always remember that the work zone is to protect both the customer and field service personnel. Any work activity that may present the potential for injury to other than field service personnel must be terminated if the work zone if breached by unauthorized personnel.

3. Safe Drain Unit Initial Inspection

The Safe Drain device requires that the basin and surrounding concrete or asphalt be intact. It is important that any cracks, heaving, separation or surface misalignments be documented on the FSR. Safe Drain is not responsible for repairs or maintenance of any infrastructure supporting the Safe Drain product. These areas fall under the responsibility of the customer and any attempts to repair these surfaces may not be conducted without express written authorization from the customer and direction from the Safe Drain home office. Follow the sequence below, noting all findings on the FSR:

If the unit has standing water in the basin, perform the following test:

1. Using litmus paper, is the pH between 6 and 8? If yes, go to next step. If not, go to step 3.
2. If drain is free of any visible signs of leaks or spills, does not have an oily sheen, water may be vacuumed up into either vacuum truck or portable vacuum.
3. Fluids that do not meet the above standard water quality guidelines must be treated as hazardous waste and disposed of by certified professionals.
4. If pH is between 2-6 or 8-11, notify the customer for immediate action
5. If pH is below 2 or above 11, notify the customer for immediate action and potential emergency response.

If unit is dry, perform the following inspection sequence:

1. Inspect grating for cracks, warping corrosion or improper fit
2. Inspect valve body and butterfly for corrosion, fouling or damage
3. Inspect flange welds – note any defects
4. Inspect operation of valves – note discrepancies
5. Inspect valve to flange connection to include all bolts. If bolts are found to have loosened, tighten and note on FSR

Once initial inspection procedure is completed, proceed with the cleaning activities.

4. Safe Drain Cleaning

The cleaning of the Safe Drain device is a relatively straight forward process. The objective is the removal of accumulated debris and sediment. This is accomplished by using washing equipment, portable vacuums and vacuum truck.

The steps are as follows:

1. Ensure Safe Drain valve is closed.
2. Perform valve and basin leak test using the following procedure:
    a. Fill basin using clean water to brim and monitor for leak by:
        i. If unit is leak water tight, proceed to step 3.
        ii. If unit leaks, recover water from basin and inspect valve seat and butterfly for damage or fouling. Wipe clean all sealing surfaces with a clean rag and inspect again. If it appears debris was causing unit not to seal (very unusual situation) close valve and repeat leak test. If unit is leak watertight proceed to step 3. If not, and an immediate cause cannot be isolated, remove valve and install valve blank off plate. Retest. If unit holds water proceed to step 3. If not, notify Safe Drain headquarters for further instructions.
3. Rinse grating into Safe Drain basin.
4. Remove grate and set aside.
5. Remove any loose debris that is not sediment – if customer is tracking recovered materials, bag into separate bags for each type of material for later quantification and qualification.
6. Rinse valve and basin assembly and area immediately surrounding basin inlet where feasible and either continue with pumping to container or landscape. Transfer dirty water on a continuous basis so that potentially sediment laden water does not settle out onto paved surfaces and later back into basin.
7. Recover water and sediment.
8. Using a wire brush, remove any persistent materials on basin walls, valve shaft or grating.
9. Wipe valve seats and butterfly off using a clean rag.
10. Open valve and wipe inner seals off and reverse side of butterfly.
11. Close valve.
12. Return valve to normal position.
    a. Lube valve seat with a lithium food grade lubricant.

5. Filter Maintenance (for Filter-Equipped Units)

Units with filtration media shall have the filters and/or filter media removed, bagged, and disposed of properly.

For standard filter units, remove the entire yellow filter and clean the filter support assembly. Document the installation and removal date of any filters. Re-install the new filter after all cleaning is completed. Ensure that the new filter is seated properly. The new filter ***should not*** be wetted after installation.

For "Premium" filter units, the contaminated loose filter media must be removed entirely by scooping or vacuuming. The entire filter assembly must be sprayed clean and new filter media installed, filling the device completely.

Document the installation and removal date of any filter media. Ensure that the filter canister is seated properly, and that the lid is securely attached. The new filter media ***should not*** be wetted after installation.

Disposal of Contaminated Filter Media
Disposal of filter media depends upon customer program. Some filters will need to be returned to Safe Drain for qualification/quantification. Customers who are not on the waste removal tracking program can have their filters bagged and disposed of in the dumpster.

Any filter that is suspected of having contacted hazardous materials is to be treated as hazardous waste and is to be removed and disposed of by certified personnel only. The filter removal process is straightforward and can be performed with ease by most people.

Safe Drain Replacement Filter Options

Safe Drain filters are unmatched in thier performance, capturing up to 99% of hydrocarbons, heavy metals, and other pollutants. As such, Safe Drain filter systems require regular maintenance and service.

For the standard filtration system, there are replacement filters available for all valve sizes.

For Safe Drain's 'Premium" filter system, 5-gallon buckets of loose media are available in multiple varieties to match your specific filtration needs.

Contact your Safe Drain representative for ordering information.

6. Disposal of Cleaning Water

Water that is collected during the servicing process must be disposed of properly and prior to leaving the customer site. This can be accomplished in several ways. Depending upon the volume of water, it may be directed to the sanitary system, landscape area or other customer treatment facility. Any of the methods detailed below must be approved by the customer.

The following are options:

Filtration – water recovered may be passed through the Safe Drain® filtration system and discharge either directly into the sanitary or landscape. This water, although cleaner than the original recovered water, is not to be discharged back into the storm drain system.

Separation – for customers that are attempting to quantify/qualify the material being removed, the accumulated water must be separated either through the filtration system or settling tank. The purpose is to allow the sediment and other bulk materials to settle on the bottom of collection tank for later drying and evaluation. This material may be transferred in solid form to the customer prior to drying for their disposition. Only if Safe Drain has a contract with the customer for the qualification and quantification of removed materials, will Safe Drain® retain the materials for testing.

Disposal of Waste – solid matter collected from the cleaning process may be bagged and disposed of in the customer dumpster. Being that the sediments will normally be wet, this material must be double bagged prior to disposal to ensure that fluids are not escaping the dumpster and creating a new waste stream. It is preferred that the materials be dried prior to disposal. This is only feasible on longer duration projects.

Water Disposal – remember, water discharged into the landscape is intended to irrigate existing foliage. Discharge must not disturb existing plant life or cause erosion. Fluid discharge must never escape the landscape area.

Note: Any water that is contaminated with chemicals is to be treated as hazardous waste and should be handled by hazardous waster personnel only. Do not discharge water that has an oily sheen onto landscape. This water must only go into the sanitary system.

7. Post-Cleaning Inspection

After cleaning surfaces, it is required to perform additional visual and operational inspections.

These procedures are as follows:

1. Inspect all weld seams for corrosion, cracking, separation or other defect(s) that might result in leaking. In the unlikely event that a weld is found to be defective, notify Safe Drain headquarters for appropriate repair procedure.

2. Inspect valve seat, butterfly, sealing surfaces, valve body, valve stem and valve handled for corrosion, fouling or damage.

3. Inspect valve operation. Does unit open and close smoothly without sticking?
   - If unit sticks, attempt to determine cause. If unable to determine cause, does valve stick to the point that it does not properly open or close?

     If yes – replace valve
     If no – register on nonconformance report for tracking

8. Safe Drain Identification Maintenance

Some Safe Drain units installed are identified in the field using distinctive, high contrast yellow paint. This painted area indicates clearly that the drain has a Safe Drain device installed, may indicate status (open or closed) and has a unique identification number or tag. Some sites also have the **"No Dumping -- Flows to Bay, River or Other Body of Water"** stencils or placards. Ensure that these items are in good repair and repaint as required. Ensure that the yellow marking on the grate for key orientation is visible and bright. Repaint as required. Ensure that inlet and surrounding property is protected from overspray. Restore all wording so that it is legible. The metal "No Flow" placards are very durable and should only need wiping down. Ensure that the adhesive on these items is secure. Reattach as needed.

9. Field Service Documentation

All servicing, inspection and cleaning activities are documented on the Field Service Report form (SOP-FSR 104). This form is designed to allow trending of potential defects provides third party documentation for the customer in the event of EPA or other agency audits and are part of the contract documentation package. These forms are to be regarded as legal documents and all information must be legible, complete and accurate. Any personnel found to be falsifying these documents will be terminated.

All documents are reviewed in accordance with the Safe Drain internal quality management program. Any deviations will be assigned a tracking number and entered into the Nonconformance database for disposition.

Safe Drain Unit(s) Installation Record

Date of Installation: ____ /____ /____

Number of Units Installed: ____

Installer Name: _____

Location Details

Location 1

Size of Unit(s): _____

Valve Size(s): _____

Filter Size(s): _____

Valve Position Left: [ ] Open [ ] Closed

Location 2

Size of Unit(s): _____

Valve Size(s): _____

Filter Size(s): _____

Valve Position Left: [ ] Open [ ] Closed

Location 3

Size of Unit(s): _____

Valve Size(s): _____

Filter Size(s): _____

Valve Position Left: [ ] Open [ ] Closed

Location 4

Size of Unit(s): _____

Valve Size(s): _____

Filter Size(s): _____

Valve Position Left: [ ] Open [ ] Closed

Location 5

Size of Unit(s): _____

Valve Size(s): _____

Filter Size(s): _____

Valve Position Left: [ ] Open [ ] Closed

Location 6

Size of Unit(s): _____

Valve Size(s): _____

Filter Size(s): _____

Valve Position Left: [ ] Open [ ] Closed

Location 7

Size of Unit(s): _____

Valve Size(s): _____

Filter Size(s): _____

Valve Position Left: [ ] Open [ ] Closed

Location 8

Size of Unit(s): _____

Valve Size(s): _____

Filter Size(s): _____

Valve Position Left: [ ] Open [ ] Closed

Notes:

Safe Drain Stormwater Holdings, Inc.
P.O. Box 723, Oakdale CA 95361
800-764-5220 • info@safedrainusa.com

SAFE DRAIN®