Contractor Training for Underground Stormwater Facility Maintenance

Spring 2018

Presented by:
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Contractor Requirements

- Maintain OSHA Confined Space Certification
- Follow Montgomery County Noise Control Ordinance
- Follow Montgomery County and/or Maryland State Highway Administration Work Zone Traffic Control Standards
Belowground Inspection Procedures

• DEP is now conducting only triennial inspections of ALL stormwater management facilities.

  Yearly Pre-Inspections of underground facilities will no longer be preformed.

• Underground inspections require pump out and cleaning of structure.

• At the request of the property owner/manager, DEP will conduct courtesy preventative maintenance inspections.
Belowground Notification Procedures

- Inspection performed
- MC.DEP sends Maintenance Repair Report/Work Order to the facility owner via e-mail
- Emergency and High Repairs must be completed ASAP.
- Other repairs may be deferred.

*For filtration devices, contractors should not prepare bids off the work order alone.*
Maintenance Notification and Inspection Report

- **Maintenance**: Follow the cleaning methods and procedures we will review today.

- **Minor Repairs Required**: These minor repairs must be completed at the time of cleaning.

- All repairs must be included in bid.
Repair Work Order

EAM
STORMWATER INSPECTION AND MAINTENANCE WORK ORDERS

Work Order
G6171 (DEP) - SEPSF Repairs, Hearthstone Village, CA
Scheduled Start Date: 01/26/2014

Status: Closed

Parent Work Order

Department: SWA-RESID-DEP - Residential Maintained by DEP

PM Code: Cost Code:

Problem Code:

Reported By:

Standard WO: REPWCU8 SEPSF - SEPSF Repairs:
Equipment: 12302 (DEP) - Hearthstone Village, CA
Location: INSPIRED (DEP) - Inspection Region 1

Estimated Hours: 2
Estimated Cost: 0.00
Actual Cost: 0.00

Date Started: 02/17/2015
Date Completed: 02/17/2015

Montgomery County Asset #12932

Equipment User Defined Fields:

Sequenced Number: 210861.02

Access Street: 1930 University Blvd

Owner: Hearthstone Village Condo Assoc

Property Manager: IHO Real Estate, Inc.

Work Order Comments:

- Minor sediment accumulation on filter media.
- Monitor Photos 20, 24-20.
- Greg Phillips, G. Oama Phaggle
- MILE (02/12/2015 12:49)

Work Order User Defined Fields:

Contracted Inspector: 
GAGC Reviewer: 
Maintenance Level: ROUTINE
Date Insp Completed: 01/07/2014

Activities:

Activity: CM0010
Est Hours: 1
People Req: 1
Task Plan: M-UG01
Description: Annual Maint. Sediment, Debris removal, Pump & pressure wash facility ROUTINE

MUT1A (Mar 9, 2016 8:23:44 AM):
Maintenance Procedures:
- This facility washes all sediment, trash, debris, and liquids removed from the structure.
- Property disposal of all liquids and material removed from the structure.
- Repair or use of all metal components of the facility, including replacement if directed by DEP inspector.
- The facility may be power washed.
- You must contact the assigned inspector at least 48 hours before beginning the maintenance work.
- The inspector must inspect the cleaning and repair activities while these activities are occurring to ensure these activities are properly performed.

Once all work has been completed, contact the Inspector to schedule a final inspection of your facility.

ODENI (Oct 5, 2012 2:32:33 PM):
Monitor Non-Structural Components: Vegetation and Trash - ROUTINE

Monitor Non-Structural Components of Stormwater Facility to ensure adequate vegetation cover and excessive trash and debris.
Maintenance Notifications: NOV

High Criticality & Emergency Repairs

An inspection of the existing underground stormwater management system by this Department and this Department’s inspection contractor reveal the structural integrity of the existing 72” diameter corrugated metal pipe is threatened.

The property owner shall immediately secure the services of a professional civil engineer licensed in the State of Maryland, to perform a structural analysis of the underground stormwater facility in its entirety.

Because inspections have revealed the structural integrity of the stormwater facility is in jeopardy of failing and/or collapsing, this Department recommends the following course of action be exercised immediately:

1. Block/disallow parking over and adjacent to the facility (see attachment aerial photo)
2. Install timber blocking within the existing 72” CMP to prevent collapse of the pipe.

This underground stormwater management facility is considered a confined space and all applicable Maryland Occupational Safety and Health (MOSH) and Occupational Safety and Health Administration (OSHA) laws and regulations must be complied with by persons entering the underground stormwater facility.

Any repairs to the underground stormwater management system must be performed by a contractor approved by this Department. A list of approved contractors may be located on our website at: Approved SWM Underground Contractors

The property owner must contact the undersigned immediately to schedule a meeting to discuss the condition and repairs to the stormwater management system.

Re-Inspection Date(s):
Inspector: Jerry Oden 05/18/2012

Received By: E-mailed To: Walter Perla, Assistant Chief Building Engineer 05/18/2012
Scheduling an Inspection

- Call the MC.DEP Inspector at least **48 hours** prior to cleaning and performing repairs

- E-mail a notice of cleaning and repairs to DEP: SWInspections@montgomerycountymd.gov

- **DAY OF CLEANING**: Contact MC.DEP Inspector the **morning** of maintenance
Maintenance Coordination

- Failure to coordinate your maintenance with our staff may result in our inability to inspect the completed work.
- If this happens, you may be required to pump out the structure a second time.

We will make every effort to work with you, but it is a “two-way” street.
On Site

- Call the MC.DEP Inspector each day that maintenance is proceeding.

- Call the MC.DEP Inspector if you cannot keep the appointment.

- Contact Oaks Treatment Facility in accordance with *STANDARD OPERATING PROCEDURES FOR STORMWATER VENDORS* (See handout)

- Property Owners will not receive credit unless all procedures outlined in the presentation are followed
Questions, Concerns, Problems?

Call the MC.DEP Inspector
New 2018: Manifest Required

Certification:

- I hereby certify that the information on this MANIFEST is correct and that the materials disposed are from stormwater facilities within Montgomery County, MD.
Disposal Procedures
Shady Grove Transfer Station
6001 Olney-Laytonsville Road
(near Fieldcrest Road and MD. Rte. 108)
Laytonsville, MD.
Pumping & Disposal of Liquids & Materials from Underground Facilities

WRONG

Pumping to Dirt Bags or other structures & locations is not permitted!

Correct

All liquids and solid waste must be transferred to vac truck and disposed of at the Oaks Landfill or other approved disposal site.
Knowledge Check
Repair Procedure Question

- When must you call the MC.DEP Inspector to schedule an inspection?

At least:

A. 2 hours prior to cleaning and performing repairs.
B. 48 hours prior to cleaning and performing repairs.
C. 7 days prior to cleaning and performing repairs.
Repair Procedure Question

You must contact the MC.DEP Inspector on the **morning** of maintenance.

True
or
False
Disposal Procedure Question

Dumping at the Oaks without a Waste Discharge Manifest is allowed.

False

True

Or

False
Now you Know

You need to maintain:

- Oil Operations Permit from MDE
- OSHA Confined Space Certification
- Maintain a Collector License.

You need to follow

- Montgomery County Noise Control Ordinance
- Montgomery County Work Zone Traffic Control and/or Maryland State Highway Administration Traffic Control Standards
- Notification and Oaks Disposal Requirements
What happens if you fail to comply with the procedures?

DEP may issue a civil citation to the **owner** or **management company** if:

- Inspector is not notified **48 hours** before maintenance is to begin, and
- Inspector is not notified **each morning** maintenance is to begin.

(COMCOCOR Chapter 19, Section 19-28)
Maintenance Procedures
Know your scope of work BEFORE you arrive.
Know Your Structures & Scope of Work

ALWAYS clean to the 1st inlet

Primary Stormwater Management Facility

Flow Splitter

Pre-Treatment Device

Insure Work Area is guarded for the safety of the public and your workers.
Initial Maintenance Procedures
All Structures

1. Install outfall pipe plug
Initial Maintenance Procedures
All Structures

2. Hydrojet the inlet pipe from the 1st inlet structure that flows into the Stormwater Management Structure.
Maintenance Procedures: Non-Proprietary Devices

- Flow-Splitter
- Oil/Grit Separator
- Structural Sand Filter
- Underground Detention Pipe System
Flow Splitter
Oil/Grit Separator
Pressure Washing Interior of All Structures Required
Oil/Grit Separator

Access May Be A Challenge
Separator Sand Filter
Maintenance Procedures

- Before you bid, contact the MC.DEP Inspector.
- Determine necessary maintenance to bring to As-Built or current County standards.
- Assist with developing the scope of work for your contract.
- **ALL** repair material must be on job site next to sand filter before replacement work of filter media begins.
- Replacement of filter material may only start with the MC.DEP Inspector’s approval.
Separator Sand Filter
Maintenance Procedures (cont.)
Separator Sand Filter
Maintenance Procedures (cont.)
Sand Filter Contamination

Excessive Sediment Deposits Remain In Voids of Stone
Underground Detention Pipe System
Underground Detention System
Maintenance Procedures
Underground Concrete Vault Detention System
Maintenance Procedures: Proprietary Devices

- Stormceptor®
- BaySaver™
- AquaFilter™
- Aqua-Swirl™
- The Snout®
- StormFilter®
- Environmental 21 V2B1

- Vortechnics®
- VortSentry®
- VortSentry HS®
- CDS®
- Jellyfish®
- Hydroguard®
BaySaver™
StormFilter®

PhosphoSorb® Filter Media

Designed for targeting high levels of phosphorus
Approved of filter material:

- XF CSF Cartridges (extra fine-CFS leaf media)

CSF Cartridges should have ORANGE caps on the top of the filter.
StormFilter
StormFilter®
Class Participation

Time
Something is WRONG…
Class Participation Time

What's the Problem? How do you fix it?
Class Participation Time

What’s the Problem? How do you fix it?
What is the problem?

Spalling
What is the problem?

Loose ladder/manhole step
What is the problem?

Trash Rack needs to be replaced
Serious Problems Requiring Immediate Attention

- Crushed Pipes,
- Pipe Deflections (Pipes out of Round)
- Pipe Joint Leaks & Separations
Serious Problems Requiring Immediate Attention

- Excessive Soil Accumulations and Soil Infiltration to Structures

- Sediment Deposits from Failed Joints
Serious Problems Requiring Immediate Attention

Pavement Cracking, Pavement Failures Over Underground Facilities
Past Underground Detention Repair

Note Trees

60 inch Corrugated Metal Pipe – Underground Detention System
Past Underground Detention Repair

Most all pipe joints had failed

New Internal Bands & Gaskets Installed
Past Underground Detention Repair

The round pipe was ‘squashing’ or becoming ‘egg’ shaped.

A concrete invert, steel load spreader bar & columns were installed to prevent additional collapsing of the pipe.
Remember the trees? The engineer felt it was best to remove the trees because the pipe did not have much ‘cover’ over it and the weight of the trees were likely contributing to the ‘squashing’ of the underground pipe.
Past Underground Detention Repair

The preceding repairs were designed and implemented under the supervision of a Professional Engineer.

All such repairs must be reviewed and approved by our Department.
Other Types of Structures Installed in Montgomery County

- Contact Inspector prior to performing maintenance on these so procedures can be discussed.

- Follow manufacturer maintenance process.

- Maintenance procedures will soon be placed on the MC.DEP website.
Hydroguard®
Aqua-Swirl and Aqua-Filter®
ADS BAYFILTER™ STORMWATER FILTRATION SYSTEM
The “Snout”
Environmental 21 V2B1
Vortechs®
VortSentry® & VortSentry® HS
CDS Unit
Jellyfish Filter
Sorbptive Filter
Questions

Always Coordinate Cleaning & Maintenance Of Underground Structures With Both The DEP Inspector & The Oaks Landfill In Advance Of Performing Work.