

Technical Memorandum #4



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To: Clark County
From: Deanna Hutchinson / Tim Kraft
Copies:
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Subject: Inspection Sheet Comparison
Project No.: 14505

There were only minor differences between the Clark County (CC) inspection sheets and the 2005 Department of Ecology (DOE) *Stormwater Management Manual for Western Washington* Vol.V Section 4.6. The highlights are discussed below.

Detention Pond -

- Trash & Debris/Litter: Disagreement of the volume 5 ft³ of debris will take up. DOE lists 1 standard trash can, CC lists ½ standard trash can.
- Vegetation, Poisonous and Noxious: typo in results. Should read "...might normally..."

Infiltration -

- Sediment & Debris: Under maintenance trigger, CC lists only a percolation test, while DOE also includes a visual test. CC lists nothing under results. DOE provides instructions under results.
- Trash & Debris/Litter: Disagreement of the volume 5 ft³ of debris will take up. DOE lists 1 standard trash can, CC lists ½ standard trash can.

Closed Detention System (Tanks/Vaults) -

- Metal Grate Damaged or Missing: The maintenance trigger and result under this defect is a duplicate of "Grate Opening Unsafe." The defect title belongs on the following line with the broken members of the grate.
- Structural Damage: typo in results. Should read "Top slab..."

Control Structure/Flow Restrictor -

- Cover Damaged or Difficult to Remove: CC contains additional text under maintenance trigger that reads, "Corrosion/deformation of cover."
- Ladder Rungs Unsafe: CC contains additional text not found in DOE. In Maintenance trigger, it is "Confined space warning sign is missing." And in Results, it is "Replace sign warning of

confined space entry requirements. Ladder and entry notification complies with OSHA standards.”

- Metal Grate Damaged or Missing: The maintenance trigger and result under this defect is a duplicate of “Grate Opening Unsafe.” The defect title belongs on the following line with the broken members of the grate.
- Add to grate items: CC is missing a row from DOE that should read “Trash and debris that is blocking more than 20% of grate surface inletting capacity” under maintenance trigger and, “Grate free of trash and debris” under result.
- Obstructions, incl. roots: the row that includes the text “Plate is free...” is a duplicate of one of the rows under the defect “Orifice Plate Damaged or Missing” and should be omitted.
- Trash & Debris/Litter: CC contains a row not included in DOE. The one that discusses the control structure/flow restrictor.

Debris Barrier -

- No differences between DOE and CC.

Catch Basin -

- Cover Damaged or Difficult to Remove: CC contains additional text not found in DOE under maintenance trigger that reads “Corrosion/deformation of cover.”
- Ladder Rungs Unsafe: CC contains additional text not found in DOE. In Maintenance trigger, it is “Confined space warning sign is missing.” And in Results, it is “Replace sign warning of confined space entry requirements. Ladder and entry notification complies with OSHA standards.”
- Metal Grate Damaged or Missing: The maintenance trigger and result under this defect is a duplicate of “Grate Opening Unsafe.” The defect title belongs on the following line with the broken members of the grate.
- Add to grate items: CC is missing a row from DOE that should read “Trash and debris that is blocking more than 20% of grate surface inletting capacity” under maintenance trigger and “Grate free of trash and debris” under result.

Energy Dissipater -

- Cover Damaged or Difficult to Remove: CC contains additional text not found in DOE under maintenance trigger that reads “Corrosion/deformation of cover.”
- Ladder Rungs Unsafe: CC contains additional text not found in DOE. Under Maintenance trigger, it is “Confined space warning sign is missing.” And in Results, it is “Replace sign warning of confined space entry requirements. Ladder and entry notification complies with OSHA standards.”
- Metal Grate Damaged or Missing: The maintenance trigger and result under this defect is a duplicate of “Grate Opening Unsafe.” The defect title belongs on the following line with the broken members of the grate.

Inspection Sheet Comparison

- Sediment and Debris: CC contains a row not included in DOE. The one that discusses the energy dissipater.
- Water Flows Out Top of “Distributor” Catch Basin: typo in results. Should read “Facility rebuilt...”

Typical Biofiltration Swale -

- Excessive Shading: CC contains additional text not found in DOE in maintenance trigger “or embankment.”
- Flow Spreader: CC contains additional text not found in DOE in results “filter, or embankment.”
- Trash & Debris/Litter: CC slightly different from DOE, but equivalent.
- Vegetation, Poor Coverage: CC contains additional text not found in DOE in maintenance trigger “or filter strip surface area.”

Wet Biofiltration Swale -

- Erosion/Scouring: typo in results. Should read “...(soft rush)...”
- Trash & Debris/Litter: Disagreement of the volume 5 ft³ of debris will take up. DOE lists 1 standard trash can. CC lists ½ standard trash can.

Filter Strip -

- Erosion/Scouring: typo in results. Should read “...large, generally...”
- Flow Spreader: CC contains additional text not found in DOE under both maintenance trigger and results “swale” and “or embankment.”
- Vegetation: DOE says to “control nuisance vegetation”, while CC calls to “remove” it.
- Vegetation: CC contains additional text not found in DOE in results “Remove grass clippings.”

Wetpond -

- Inlet/Outlet Pipe: CC contains additional text not found in DOE under maintenance trigger “Debris barrier missing or not attached to pipe.”
- Settlements or Misalignments: CC missing text from DOE “...design elevations or inspector determines dike/berm is unsound.”
- Settlements or Misalignments: CC contains additional text not found in DOE under maintenance trigger. “If settlement is apparent, measure berm to determine amount of settlement. Settlement can be an indication of more severe problems with the berm or outlet works. Consult a licensed engineer to determine the source of the settlement.”

Wetvault -

- Cover Damaged or Difficult to Remove: CC contains additional text not found in DOE under maintenance trigger that reads “Corrosion/deformation of cover. Intent is to keep cover from sealing off access to maintenance.”

Inspection Sheet Comparison

- Vault Structure Damage: lists “cracks wider than ½-inch and any evidence of soil particles entering the structure through the cracks” twice.

Sand Filter (Above Ground/Open) -

- Flow Spreader: the words “swale, filter, or embankment” should be replaced with “sand filter.”
- Prolonged Flows: typo in results. Should read “...and does not dry out...”

Sand Filter (Below Ground/Enclosed) -

- Cover Damaged or Difficult to Remove: CC contains additional text not found in DOE under maintenance trigger that reads “Intent is to keep cover from sealing off access to maintenance.”
- Ladder Damaged: CC contains additional text not found in DOE. In Maintenance trigger, it is “Confined space warning sign is missing.” And in Results it is “Replace sign warning of confined space entry requirements. Ladder and entry notification complies with OSHA standards.”
- Damaged Pipes: CC missing this entry. Maintenance trigger should read “Inlet or outlet piping damaged or broken and in need of repair.” Results should read “Pipe repaired and/or replaced.”
- Vault Structure Damage: replace “and any” with “or”

CONTECH StormFilter (Leaf Compost or ZPG Filters) -

- Ladder Damaged: CC contains additional text not found in DOE. In Maintenance trigger, it is “Confined space warning sign is missing.” And in Results, it is “Replace sign warning of confined space entry requirements. Ladder and entry notification complies with OSHA standards.”
- Sediment Accumulation in Vault: DOE is less strict than CC.
- Sediment Accumulation on Media: CC contains additional text not found in DOE under maintenance trigger that reads “Accumulation sediment depth on the tops of the cartridges exceed an average of 0.5 inches.”
- Access Cover Damaged/Not Working: CC missing this entry. Maintenance trigger should read “Cover cannot be opened; one person cannot open the cover using normal lifting pressure, corrosion/deformation of cover.” Results should read “Cover repaired to proper working specifications or replaced.”

Baffle Oil/Water Separator (API Type) -

- Cover Damaged or Difficult to Remove: CC contains additional text not found in DOE under maintenance trigger that reads “Intent is to keep cover from sealing off access to maintenance.”
- Ladder Damaged: CC contains additional text not found in DOE. In Maintenance trigger, it is “Confined space warning sign is missing.” And in Results, it is “Replace sign warning of confined space entry requirements. Ladder and entry notification complies with OSHA standards.”
- Vault Structure Damage: Maintenance trigger column empty in DOE

Inspection Sheet Comparison

Coalescing Plate Oil/Water Separator -

- Cover Damaged or Difficult to Remove: This row is found in CC but not DOE.
- Access Ladder Damaged: CC missing this row. Maintenance trigger should read “Ladder is corroded or deteriorated, not functioning properly, not securely attached to structure wall, missing runs, cracks, and misaligned.” Results should read “Ladder replaced or repaired and meets specifications and is safe to use as determined by inspection personnel.”

Catch Basin Insert -

- No differences between DOE and CC.

Clark County’s inspection sheets contained some facilities not listed in the DOE *Stormwater Management Manual for Western Washington* Vol.V Section 4.6. They include:

- Fence, Gate, or Water Quality Sign
- Access Road or Easement
- Drywell
- Drainage Trench
- Storm Pipe