

Maintenance of Storm Water Quality Units Guideline

Revision: April 20, 2026

Applies To: The University of Michigan (U-M), Environment, Health & Safety (EHS) employees, U-M Facilities Operations employees, Michigan Medicine employees, and contractors.

This Maintenance of Stormwater Quality Units Guideline, issued by Environment, Health & Safety, provides information about underground stormwater quality units, such as hydrodynamic devices and oil separators, for U-M employees to perform proper maintenance of the units.

Purpose

Stormwater Quality Units are designed to capture oils, sediment, suspended solids, and floatables contained in runoff and to prevent these contaminants from entering the stormwater drainage system. To ensure proper operation of the unit, as well as the storm system, periodic maintenance is required. Sediment, oils, and floatables must be pumped out to prevent back-ups and to prevent pollution from bypassing the system.

Inspections

1. The inventory of stormwater quality units to be inspected is located in Appendix A. This inventory will be updated at a minimum of annually. An example of an inspection form is located in Appendix B. Each unit shall be inspected at a minimum of once every five years.
2. All units and vaults are considered confined spaces. If entry is required at any time, please see the Confined Spaces tab found on the [EHS Physical Hazards](#) webpage.
3. If a petroleum layer is observed during inspection (a petroleum sheen is acceptable), contact EHS Environmental Protection and Permitting Program (EP3) for evaluation.
4. If no petroleum layer is observed, but the sediment level in the separator is greater than 20% of the unit, as estimated by assigned U-M staff, a cleanout shall be performed. Sediment level is estimated visually using a rod or sediment core device.

Evaluation

1. Contact EHS-EP3 staff to conduct a visual inspection of the stormwater quality unit if a petroleum layer is believed to be present.
2. If a petroleum layer is confirmed:
 - a. EHS-EP3 will place a petroleum sorbent boom in the separator, attach the boom to a fixed point for easy retrieval, and notify EHS-HMM of the boom placement. EHS-HMM will monitor the boom and determine when it should be removed.
 - i. If the boom absorbs the petroleum layer, no further action is required and Utilities staff may complete the inspection and/or cleanout.
 - ii. If the petroleum layer is still present, EHS-HMM will collect a sample from the separator and EHS-HMM will schedule a cleanout with a vendor.
3. If there is no petroleum layer present, EHS-EP3 will follow-up with the inspection staff to complete the inspection and/or cleanout.



Sampling

1. EHS-HMM will determine required analyses based on visual observations of the separator and past history.
2. If sampling is deemed necessary, EHS-HMM will collect a representative sample of the liquid/sediment mix in an appropriate sample container. Samples shall be packaged in a cooler with ice and sent to the laboratory following proper chain of custody procedures.
3. EHS-HMM will record and document all sampling details.
4. EHS-HMM will determine disposal based on analytical results.

Cleanout

1. If a petroleum layer is present and sampling has been completed, EHS-HMM will schedule an approved vendor capable of disposing or recycling the waste. EHS-HMM will perform the following:
 - a. Supervise vendor while on-site.
 - b. Review and sign the manifest (as appropriate).
 - c. Review the invoice and coordinate the rebilling for all related costs including sampling, vendor costs (including disposal and staff time), and any EHS provided supplies. The costs associated with the cleanout will be re-billed per EHS standard practice. Refer to Appendix A for a listing of responsible units.
2. If no petroleum layer is present in the separator, U-M Utilities will complete the cleanout. The collected water/sediment will be disposed of at the U-M North Campus Dump Pad. The cleanout will be recorded in the AIM system by U-M Utilities.

Referenced Documents

Maintenance of Oil/Water Separators for Sanitary

Glossary of Terms

Glossary of Terms

Floatables - Solid materials in storm water which float to the surface, such as litter and vegetation.

Petroleum sheen - Very thin films of petroleum reflecting the incoming light slightly better than the surrounding water and can therefore be observed as a rainbow of colors. This sheen will also reform when agitated. * Organic sheens may appear similar to a petroleum sheen but tend to remain broken apart when agitated and present no environmental concern.

Petroleum layer - A homogenous layer of petroleum is observed with no discontinuity.

Appendix A - Inventory of Hydrodynamic and Oil Separators for Storm Water

Appendix A - Storm Water Quality Units					
Basin ID	Location	BMP Description	Owner	Contact	Inspection
UG-01	CPP Utility Service Building	OW Separator to storm - Inactive	CPP	Malcolm Bambling	Malcolm Bambling
UG-02	Alice Lloyd	Contech CDS Water Quality Unit (Model 2015-4)	Utilities	Shane Howard	Shane Howard
UG-03	Alice Lloyd	Contech CDS Water Quality Unit (Model 2025)	Utilities	Shane Howard	Shane Howard
UG-04	Ann St Parking Structure	Oil Water Separator	Parking	Paul Clark	Shane Howard
UG-06	Children & Women's Hospital	Underground Detention with O/W Sep Pre-Trmt	Utilities	Shane Howard	Shane Howard
UG-07	Children & Women's Hospital	Underground Detention with O/W Sep Pre-Trmt	Utilities	Shane Howard	Shane Howard
UG-08	Children & Women's Hospital	Underground Detention with O/W Sep Pre-Trmt	Utilities	Shane Howard	Shane Howard
UG-09	CVC Parking Structure - East	Highland Tank Model HT-3000	Parking	Paul Clark	Shane Howard
UG-11	CVC Parking Structure-West	Highland Tank Model HT-3000	Parking	Paul Clark	Shane Howard
UG-13	East Quad	Oil Water Separator	Utilities	Shane Howard	Shane Howard
UG-14	Elbel Field	Stormceptor 300/450 Hydrodynamic Device	Utilities	Shane Howard	Shane Howard
UG-17	Institute for Social Research	Hydro International First Defense, 4 ft diam.	Utilities	Shane Howard	Shane Howard
UG-19	Jeffries Hall	WQU	Utilities	Shane Howard	Shane Howard
UG-21	Jeffries Hall	WQU	Utilities	Shane Howard	Shane Howard
UG-22	Weill Hall	Hydrodynamic Separator	Utilities	Shane Howard	Shane Howard

Appendix A - Storm Water Quality Units

Basin ID	Location	BMP Description	Owner	Contact	Inspection
UG-23	Weill Hall S5 Lot	3620 ADS WQU	Parking	Paul Clark	Shane Howard
UG-26	M50 Wall Street Lot	3620 ADS WQU	Parking	Paul Clark	Shane Howard
UG-27	M75 Mitchell Field Lot	Hydrodynamic Separator	Parking	Paul Clark	Shane Howard
UG-28	Museum of Art	Aqua Swirl- hydrodynamic device	Utilities	Shane Howard	Shane Howard
UG-29	NC27 Murfin Lot	ADS Water Quality Unit	Parking	Paul Clark	Shane Howard
UG-30	NC37 Auxiliary Services Lot	Swirl Concentrator- at 1919 Green Rd (Auxillary Se	Parking	Paul Clark	Shane Howard
UG-31	NC51 Glazier Way Lot	Nyoplast WQU	Parking	Paul Clark	Shane Howard
UG-33	M40 Kellogg Eye Lot	CDS 2025 Swirl Concentrator	Parking	Paul Clark	Shane Howard
UG-35	Crisler Center	Hydrodynamic Sep	Athletics	R.Rademacher	Shane Howard
UG-37	RSB Main Building	Hydrodynamic Device	Utilities	Shane Howard	Shane Howard
UG-39a	School of Nursing	Hydrodynamic Device- HydroInternational 1st Defens	Utilities	Shane Howard	Shane Howard
UG-39b	School of Nursing	Hydrodynamic Device- HydroInternational 1st Defens	Utilities	Shane Howard	Shane Howard
UG-39c	School of Nursing	Manhole with snout to remove oil	Utilities	Shane Howard	Shane Howard
UG-40	School of Public Health (SPH)	Contech CDS hydrodynamic separator	Utilities	Shane Howard	Shane Howard
UG-43	W3 Thompson Structure	Contech Vortsentry VS30M	Parking	Paul Clark	Shane Howard
UG-44	UM Golf Course Maint Bldg	CDS2016 Contech Water Quality Unit	Athletics	Steve Plunkett	Shane Howard

Appendix A - Storm Water Quality Units

Basin ID	Location	BMP Description	Owner	Contact	Inspection
UG-48	Field Hockey Ticket Office	Contech CDS 3030 WQU, 2.75 cfs trmt capacity	Athletics	R.Rademacher	Shane Howard
UG-52	Eda U. Gerstacker Grove	Contech CDS Water Quality Unit (Model 2020-5)	Utilities	Shane Howard	Shane Howard
UG-54	Athletic Op Center	Contech CDS Water Quality Unit (Model 2020-5)	Athletics	R.Rademacher	Shane Howard
UG-55	Athletic Op Center	Contech CDS Water Quality Unit (Model 2015-4)	Athletics	R.Rademacher	Shane Howard
UG-57	Munger Graduate Residences	Contech CDS 3020	Utilities	Shane Howard	Shane Howard
UG-58	Munger Graduate Residences	Contech CDS 3020	Utilities	Shane Howard	Shane Howard
UG-60	Mcity	4' DIA Hydrodynamic separator	Utilities	Shane Howard	Shane Howard
UG-61	Mcity	6' DIA Hydrodynamic separator	Utilities	Shane Howard	Shane Howard
UG-62	Mcity	8' DIA Hydrodynamic separator	Utilities	Shane Howard	Shane Howard
UG-63	Mcity	6' DIA Hydrodynamic separator	Utilities	Shane Howard	Shane Howard
UG-64	Golf Course Club House	Contech	Athletics	Steve Plunkett	Shane Howard
UG-65	RSB Monroe Mall	Vortechs VX16000	Utilities	Shane Howard	Shane Howard
UG-66	RSB Kresge_Blau Hall	Contech CDS Water Quality Unit (Model 2015-4)	Utilities	Shane Howard	Shane Howard
UG-67	RSB Blau Hall	Contech CDS Water Quality Unit (Model 2015-4)	Utilities	Shane Howard	Shane Howard
UG-68	RSB Executive Dorm	Contech CDS Water Quality Unit (Model 2015-4)	Utilities	Shane Howard	Shane Howard
UG-69	M93 Wall St Structure	Contech Vortechs 2000	Parking	Paul Clark	Shane Howard
UG-70	M93 Wall St Structure	Contech Vortechs 2000	Parking	Paul Clark	Shane Howard
UG-71	M93 Wall St Structure	Skimmer manhole US of Vortechs unit	Parking	Paul Clark	Shane Howard

Appendix A - Storm Water Quality Units

Basin ID	Location	BMP Description	Owner	Contact	Inspection
UG-72	Hospital Helipad	OW separator to storm, sheet M-7 of plans	MI Medicine	Joel LaRocca	Joel LaRocca
UG-73	Children and Women's Helipad	Fuel/water Separator, 300 gallon Federal Equip	MI Medicine	Steve Busse	Steve Busse
UG-74	N26 Palmer Structure	Proceptor Model OGC50	Parking	Paul Clark	Shane Howard
UG-75	N26 Palmer Structure	Proceptor Model OGC50	Parking	Paul Clark	Shane Howard
UG-76	South Quad	Contech CDS Model 2015-4	Utilities	Shane Howard	Shane Howard
UG-77	South Quad	Contech CDS Model 2015-4	Utilities	Shane Howard	Shane Howard
UG-78	ASCP	Contech CDS 4045-8-C	Athletics	R.Rademacher	Shane Howard
UG-79	ASCP	Contech CDS 4045-8-C	Athletics	R.Rademacher	Shane Howard
UG-80	ASCP	Contech CDS 4045-8-C	Athletics	R.Rademacher	Shane Howard
UG-81	ASCP	Contech CDS 4045-8-C	Athletics	R.Rademacher	Shane Howard
UG-82	ASCP	Contech CDS 4045-8-C	Athletics	R.Rademacher	Shane Howard
UG-83	Art & Architecture Bldg	Contech CDS 2015-4-C	Utilities	Shane Howard	Shane Howard
UG-84	Art & Architecture Bldg	Contech CDS 2015-4-C	Utilities	Shane Howard	Shane Howard
UG-85	West AA Health Center	Contech CDS 3030-6-C	MI Medicine	Rich Wilding	Outside Vendor
UG-86	UMHHC Brighton HC South	Aquaswirl AS3	MI Medicine	Chris Victory	Outside Vendor
UG-87	Varsity Drive Building	Contech CDS 2025	Utilities	Shane Howard	Shane Howard

Appendix A - Storm Water Quality Units

Basin ID	Location	BMP Description	Owner	Contact	Inspection
UG-91	Biological Sciences Building	Contech CDS 2020 Chamber	Utilities	Shane Howard	Shane Howard
UG-92	Biological Sciences Building	Contech CDS 2015 Chamber	Utilities	Shane Howard	Shane Howard
UG-93	NC53 Lot	KSI 1750-60-30	Parking	Paul Clark	Shane Howard
UG-94	DTE Apex Station	KSI 500-48-18	DTE	Shane Howard	Shane Howard
UG-95	Museum of Art	Contech CDS Water Quality Unit	Utilities	Shane Howard	Shane Howard
UG-96	West Wall Street Parking Structure	Contech CDS 2020-5	Parking	Paul Clark	Shane Howard
UG-97	LSA Addition	Contech CDS 2015-4-C	Utilities	Shane Howard	Shane Howard
UG-98	Michigan Union Renovation	Contech CDS 2015-4-C	Utilities	Shane Howard	Shane Howard
UG-99	Biomedical Science Research Building	CDS Oil and Grit Separating Unit	Utilities	Shane Howard	Shane Howard
UG-100	Robotics	Contech CDS 2020 Water Quality Unit	Utilities	Shane Howard	Shane Howard
UG-101	Robotics	Contech CDS 2015	Utilities	Shane Howard	Shane Howard
UG-102	Kraus Building	Contech CDS 2015-4-C	Utilities	Shane Howard	Shane Howard
UG-103	Kraus Building	Contech CDS 2015-4-C	Utilities	Shane Howard	Shane Howard
UG-104	Kraus Building	Contech CDS 2015-4-C	Utilities	Shane Howard	Shane Howard
UG-105	Kraus Building	Contech CDS 2015-4-C	Utilities	Shane Howard	Shane Howard
UG-106	Dance Building	Contech CDS 2015-4-C	Utilities	Shane Howard	Shane Howard
UG-107	Dance Building	CDS Cascade Separator CS-4	Utilities	Shane Howard	Shane Howard
UG-108	Trotter Multicultural Building	Hydro International First Defense	Utilities	Shane Howard	Shane Howard

Appendix A - Storm Water Quality Units

Basin ID	Location	BMP Description	Owner	Contact	Inspection
UG-109	Ruthven	CDS 130	Utilities	Shane Howard	Shane Howard
UG-110	Dental	Contech CDS 2015-4	Utilities	Shane Howard	Shane Howard
UG-111	Dental	Contech Stormceptor 2400	Utilities	Shane Howard	Shane Howard
UG-112	Dean Rd Transportation Center	Aquaswirl AS-5	Utilities	Shane Howard	Shane Howard
UG-113	Dean Rd Transportation Center	Aquaswirl AS-2	Utilities	Shane Howard	Shane Howard
UG-114	Dean Rd Transportation Center	Aquaswirl AS-2	Utilities	Shane Howard	Shane Howard
UG-115	Dean Rd Transportation Center	Aquaswirl AS-2	Utilities	Shane Howard	Shane Howard
UG-116	Dean Rd Transportation Center	Aquaswirl AS-2	Utilities	Shane Howard	Shane Howard
UG-117	Dean Rd Transportation Center	Aquaswirl AS-2	Utilities	Shane Howard	Shane Howard



Appendix B - Inspection Form

Annual Stormwater BMP Inspection & Maintenance Form for Proprietary Devices (Hydrodynamic Separators, Underground Detention Chambers/Tanks, Water Quality Units, etc.)

BMP ID: _____

Location: _____

Date: _____

Inspector: _____

NOTE: Take all appropriate inspection and maintenance supplies. Do not enter a confined space unless authorized and trained in confined space entry. Be aware of all safety precautions prior to site inspection and maintenance. Exercise care at all times. Contact EHS-EP3 with questions or concerns, (734) 647-1143.

Annual Unit Inspection & Maintenance

- Check here if device was not accessible and provide reason below

Inspect the unit components (inlet, outlet, chambers, screens, etc)			If NO... Date Maintained
Components free of blockages?	• Yes	• No	
Unit free of trash / floatables?	• Yes	• No	
Unit free of petroleum droplets or layer?	• Yes	• No	
If petroleum droplets or layer are observed in the unit, contact EHS EP3 (734-647-1143) for evaluation.			
Components structurally sound and free of evident damage?	• Yes	• No	
If damaged, describe:			
Unit free of sediment accumulation?	• Yes	• No	
If sediment is observed, remove, and estimate amount: _____ % of full			