

**Stormwater Management Plan
Phase II Permit for Western Washington**

The Evergreen State College
Facilities Services
Olympia, Washington 98505

In compliance with the requirements of the *National Pollutant Discharge Elimination System and State Water Discharge General Permit for Discharges in Western Washington*.

Revised Mar 2015

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Acronyms and Definitions

Best Management Practices (BMP) are the schedules of activities, prohibitions of practices, maintenance procedures, and structural and/or managerial practices approved by the Department that, when used singly or in combination, prevent or reduce the release of pollutants and other adverse impacts to waters of Washington State.

CWA means Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972)

Ecology means Washington State Department of Ecology

EPA means Environmental Protection Agency

Illicit Discharge means any discharge to a municipal separate storm sewer that is not composed entirely of storm water except discharges pursuant to a NPDES permit (other than the NPDES permit for discharges from the municipal separate storm sewer) and discharges resulting from fire fighting activities.

Municipal Separate Storm Sewer System (MS4) means a conveyance, or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains):

(i) owned or operated by a state, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State Law) having jurisdiction over disposal of wastes, storm water, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States.

(ii) designed or used for collecting or conveying stormwater.

(iii) which is not a combined sewer; and (iv) which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2. The Evergreen State College stormwater system operates as an MS4

National Pollutant Discharge Elimination System (NPDES) means the national program for issuing, modifying, revoking, and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under sections 307, 402, 318, and 405 of the Federal Clean Water Act, for the discharge of pollutants to surface waters of the state from point sources. These permits are referred to as NPDES permits and, in Washington State, are administered by the Washington Department of Ecology.

Point Source means pollution that can be traced back to a single origin or source.

Secondary Permittee means an operator of a regulated small MS4 that is not a city, town or county. The Evergreen State College is a Secondary Permittee.

Small Municipal Separate Storm Sewer System (Small MS4) means an MS4 that is not defined as “large” or “medium” pursuant to 40 CFR 122.26(b)(4) & (7) or designated under 40 CFR 122.26 (a)(1)(v). Small MS4s include systems similar to separate storm sewer systems in municipalities such as: universities, large publicly owned hospitals, prison complexes, highways and other thoroughfares. The Evergreen State College is a small MS4.

Residents for the purposes of this stormwater management plan; residents are individuals living at housing units operated by Residential and Dining Services, Facilities (Geoduck House and Presidents Residence) or Organic Farm (Farmhouse).

TESC means The Evergreen State College

WSDA means Washington State Department of Agriculture

Permit Timeline

Permit Effective Date February 16, 2007
Permit Expiration Date February 15, 2012

Renewed Permit Aug 2012 to Aug 2013
New Permit Aug 2013 to Aug 2018

<i>Deadline</i>	<i>Task</i>
February 16, 2008	<ul style="list-style-type: none">-prohibit illicit discharge and illegal dumping;-develop and implement an enforcement plan to ensure compliance.
February 16, 2009	<ul style="list-style-type: none">-begin field inspections for illicit discharge. One third of known outfalls must be inspected annually.
February 16, 2010	<ul style="list-style-type: none">-50% of stormwater inlets and oil-water separators shall be labeled.-Annual education program shall begin.-O&M Plan shall be developed and implemented.
August 19, 2011	<ul style="list-style-type: none">-All stormwater inlets shall be labeled.-The latest updated version of the SWMP shall be made available to the public via public notice.-The SWMP shall be fully implemented.-A spill response plan shall be developed.

Permit Report Submittals and Compliance Dates

<i>Submittal and/or Compliance Requirements</i>	<i>Purpose</i>	<i>Frequency</i>	<i>Beginning</i>	<i>Send To</i>
SWMP Annual Report See Ecology Annual Report	Determine compliance with the permit	Annually	March 31, 2008	Department of Ecology Water Quality Program Municipal Stormwater Permits PO Box 47696 Olympia, WA 98504-7696
Notification of Spill	Make Ecology aware of a spill into a municipal storm sewer system which could constitute a threat to human health, welfare, or the environment	As needed	Immediately when known	Dept. of Ecology (360) 407-6300 Dept. of Health, Shellfish Program (360) 236-3330
Reapplication	Renew coverage under the permit	Once	Feb 2018 180 days prior to permit expiration date	Dept. of Ecology Water Quality Program Municipal Stormwater Permits PO Box 47696 Olympia, WA 98504-7696

PERMIT DESCRIPTION AND SUMMARY

A. Background

The purpose of this document is to delineate the process by which The Evergreen State College (TESC) shall comply with the *National Pollutant Discharge Elimination System (NPDES) and State Waste Discharge General Permit for Discharges from Small Separate Storm Sewers in Western Washington*. This permit authorizes the discharge of stormwater to the waters of the state of Washington from municipal separate storm sewer systems (MS4s). Permitted MS4s must effectively prohibit non-stormwater discharges into the storm sewers and must apply stormwater management controls to the maximum extent practicable.

B. Requirements

TESC is classified under the NPDES as a Secondary Permittee, which is an MS4 operator that is not a city, town or county. TESC is required to apply for and obtain coverage under the Western Washington NPDES permit. In order to qualify for that coverage, TESC shall implement the following actions and activities:

1. Public Education and Outreach- Educate tenants and residents on stormwater issues, through a variety of media including labeling storm drain inlets, to increase awareness on the public's role in water stewardship.
2. Public Involvement and Participation- Make the public aware of the program content and status of implementation via public notice.
3. Illicit Discharge Detection and Elimination- Establish and enforce a policy that prevents illicit discharge to the maximum extent practicable.
4. Construction Site Stormwater Runoff Control- Ensure that all construction projects comply with the NPDES and local ordinances, rules, and regulations.
5. Post-Construction Stormwater Management for New Development and Redevelopment- Ensure that completed projects comply with the NPDES and local ordinances, rules, and regulations.
6. Pollution Prevention and Good Housekeeping for Municipal Operations- Develop and implement an operation and maintenance (O&M) plan to minimize stormwater pollution.

C. Execution

The above actions and activities shall be carried out in accordance with stated deadlines, and they shall be fully implemented by August 19, 2011. Further information can be accessed at the EPA NPDES National Menu of Stormwater Best Management Practices website (<http://cfpub.epa.gov/npdes/stormwater/menuofbmps>).

CAMPUS DESCRIPTION

The issue of surface water is particularly relevant to TESC, because it is located on the Cooper Point Peninsula, with extensive waterfront on the Eld Inlet. The college focuses on many environmental issues, not least of all clean water, and it has set a good example in minimizing its impact on the inlet by maintaining a largely undeveloped, heavily forested campus. The reasoning behind this choice, apart from minimizing TESC's ecological footprint, is that a relatively natural and undisturbed campus fosters well being, supports environmental education, and allows for outdoor recreation.

The undeveloped portions of TESC property have been set aside as reserves. The reserves—Ecoforest/Ecoagriculture area, Old Forest Area, Geoduck Beach and Grass Lake wetland area—are key to the health of the campus watershed. The Geoduck Beach is both the most ecologically important and heavily visited. The 3300 foot waterfront is home to a wide variety of shellfish, and because it has been protected, it is a valuable resource for education on marine ecology. However, it faces some issues: it is a popular destination for students and community members, and it is bounded on its eastern end by the mouth of Snyder Creek, the primary outlet for campus runoff.

The majority of this runoff is channeled from the campus core, where most of TESC's buildings are concentrated. Thus, the campus core is also the location of the highest number of impervious surfaces on TESC property. These include the roofs of the Lab buildings, Arts Annex, Rotunda, portions of Daniel J. Evans Library, Seminar I, portions of Seminar II, Communication, College Activities Building, Campus Recreation Center, residential housing, etc.; the pavement in Red Square; and the walkways among the buildings. Green strips, small gardens, green roofs on Library and Seminar II, pervious paving, bioswales and native trees mitigate the effects of impervious surfaces. Similarly, the stormwater detention tank at Seminar II mitigates the high runoff from significant storms.

Other impervious surfaces include campus parking lots; there are three primary lots on campus: B, C and F. B lot and C lot are located to the south and southeast of the Daniel J. Evans Library complex, and F is located north of the Residence Halls. There is a joint oil-water separator for B and C lots to the west of C lot, from which stormwater passes through a Red Alder grove and travels south and west before entering Eld Inlet. The oil-water separator for F is located at its north-east corner, and water from it passes into a drainage ditch that runs along Overhulse Rd. NW before cutting north-westward into the woods to join Snyder Creek.

Snyder Creek receives a large volume of campus stormwater runoff, as does the Red Alder grove west of C lot, but illicit discharge to that system is reduced through the use of pervious pavement, oil-water separators, bio-swales and dense vegetation. These measures serve to filter many of the potential pollutants out before they reach the Eld Inlet, and in this way TESC works constantly to preserve water quality in the Puget Sound.

PUBLIC EDUCATION AND OUTREACH

A. Content

This section outlines the process whereby TESC shall educate tenants and residents on stormwater issues. Some elements must be initiated, while others are already in place and shall be maintained. The goal throughout shall be to increase awareness of the link between on-campus activities and the water quality of the south Puget Sound. Tenants and residents shall be provided with guidance on steps and specific actions that they can take to reduce their stormwater pollution potential. (<http://cfpub.epa.gov/npdes/stormwater/menuofbmps>).

B. Authority

This process shall be carried out through the Office of Environmental Health and Safety, which shall design and implement specific means of carrying out each of the elements, delegating as necessary. The required educational topics shall be covered through a variety of media and employ the following strategies:

1. Label Stormwater Drains.

Storm drain inlets that are located in maintenance yards, in parking lots, along sidewalks and walkways shall be clearly and permanently labeled with the message “Dump no waste Drains to Eld Inlet”. The specific location of these storm drain inlets is indicated on the stormwater drainage map Appendix 3.

All inlets are labeled. Any inlet having a label that is no longer clearly visible and/or easily readable shall be re-labeled within 90 days.

2. Educate residents on stormwater issues.

Each year, beginning no later than February 16, 2010, the Office of Environmental Health and Safety shall distribute information on the impact of stormwater discharges on receiving waters and the steps that can be taken to reduce pollutants in stormwater runoff. This information shall be distributed through a variety of media: handouts, webpages, and/or lectures. Different combinations of topics as described below shall be addressed each year.

a. How stormwater runoff affects surface water.

TESC residents shall be educated on common pollutants, particularly those associated with commuting to and living on campus. They shall also be educated on the potential impact of those pollutants on surface water. An emphasis shall be placed on the impact of everyday activities on water quality, and ways in which TESC community members can minimize their impact on surface water shall be recommended.

b. Proper use and application of pesticides and fertilizers.

TESC maintains a strict policy against herbicides and overuse of fertilizers. Residents shall be educated on the reasoning behind this policy, and they shall be encouraged to

carry this ideology into their own homes.

c. Benefits of using native and well-adapted vegetation.

Residents shall be educated on the reasoning behind the Arboretum Plan and the ways in which it can support the effort to phase out non-native vegetation on campus. The aim of this session shall be to spread information about the plan, encourage further student participation in garden development, and secure support for possible expansion in the future. See <http://academic.evergreen.edu/projects/arboretum/home.html> for more information.

d. Alternative equipment washing practices including cars and trucks that minimize pollutants in stormwater.

Residents shall be educated on equipment and vehicle washing practices that minimize discharge to the MS4, which include: using a commercial car wash, using biodegradable soaps, using nozzles that shut off automatically, limiting wastewater to the greatest extent practicable; washing in a designated pervious area, diverting wash water into the sanitary sewer system; and covering storm drains while washing vehicles.

e. Benefits of proper vehicle maintenance and alternative transportation choices.

Residents shall be educated on available alternative transportation programs: the Bus Pass System, which allows current TESC students to ride Intercity Transit for free by showing their student id; and CTR (Commute Trip Reduction), which is a state mandated program aimed to reduce the number of people who drive to campus alone. Educate employees on the Employee Benefits Program, which rewards employees who use alternative commute methods with free Intercity Transit passes, on campus lockers and showers, limited free on campus parking and other benefits.

Commute Trip Reduction Program shall spread information on the nature of these programs, and it shall encourage participation in them. The goal shall be to sustain high participation in the programs, thereby reducing campus traffic and the resulting pollution.

f. Proper handling and disposal of wastes, including the location of hazardous waste collection facilities in the area.

Residents shall be educated on proper identification and disposal of household hazardous waste, including locations of local used oil recyclers, used battery collection sites and household hazardous waste drop off sites, including information about [Thurston County Hazo House](#).

g. Benefits of litter control and proper disposal of pet waste.

Littering on TESC property occurs most noticeably in the Old Forest Area, where informal gatherings are held and campers are known to reside periodically. Police Services conducts regular patrols of this area to remove campers, and an outside contractor is hired to remove any remaining debris. EHS will work with the Communications Manager to inform the campus community of the impact of littering.

Pets are present on campus; Geoduck Beach and Old Forest Area are heavily visited by dog walkers. This audience shall be addressed by posting a sign at the head of the trail into the Old Forest Area, which bears information on the environmental hazards associated with [pet waste](#). The EPA identifies non-human waste as a significant source of nonpoint source pollution.

PUBLIC INVOLVEMENT AND PARTICIPATION

The latest updated version of the SWMP shall be made available to the public via posting to the TESC website.

ILLICIT DISCHARGE DETECTION AND ELIMINATION

TESC shall comply with local ordinances, rules, and regulations that govern non-stormwater discharges. These ordinances address: illicit connections, non-stormwater discharges and spilling, dumping, or otherwise improperly disposing of hazardous materials, pet waste, and litter.

A. The following sources may be discharged to the stormwater system:

1. Non-stormwater discharges covered by another NPDES permit
2. Discharges from emergency fire fighting activities
3. Diverted stream flows
4. Rising ground waters
5. Uncontaminated ground water infiltration
6. Foundation drains
7. Air conditioning condensation
8. Irrigation water from agricultural sources that is commingled with urban stormwater
9. Springs
10. Water from crawl space pumps
11. Footing drains
12. Flows from riparian habitats and wetlands.

B. The following sources are not allowed to discharge to the stormwater system, unless stated conditions are met:

1. *Discharges from potable water sources*, including water line flushing, hyperchlorinated water line flushing, fire hydrant system flushing, and pipeline hydrostatic test water, unless the water is dechlorinated to 0.1 ppm or less, pH-adjusted if necessary, and controlled to prevent resuspension of sediments in the stormwater system.
2. *Discharges from lawn watering and other landscape irrigation runoff*. These discharges are reduced through limited irrigation only during the summer months. Underground reservoirs in the upper fields and underground drainage pipes in the lower fields further reduce runoff. Irrigation schedules and sprinkler patterns are monitored frequently to ensure landscaped areas are not overwatered.

3. *Dechlorinated swimming pool discharges.* Limit swimming pool power-outage related discharges to the MS4 to the greatest extent practicable.

4. *Street and sidewalk wash water, water used to control dust, and routine external building wash down that does not use detergents.* Where moss accumulates, buildings and sidewalks are cleaned with a high pressure washer. A street sweeper is used to clean roadways and walkways. Water is conserved to the maximum extent practicable, and no chemicals are used.

C. A map of the storm sewer system that shows storm drain outfalls, delineates the area contributing to each outfall and marks the receiving waters is available on our website. <http://www.evergreen.edu/facilities/environmentalhealth/docs/campus-stormdrain-map.pdf>

D. Annually, Grounds shall inspections one third of known outfalls for illicit discharges. Illicit discharge is wastewater that enters the stormwater system without being treated and it occurs as a result of improper connections in the wastewater system. Records shall be kept of inspections and follow-up activities (See Appendix 5).

E. The Evergreen State College Contingency Plan is incorporated by reference as the spill response plan.

F. Facilities (Motor Pool, Grounds, Construction Services, Maintenance Services and Project Management) and Housing Facilities will be trained in the prevention of spills and illicit discharges. Training will be as needed and may be presented in a variety of formats, including, but not limited to, pamphlets, classroom and video.

CONSTRUCTION SITE STORMWATER RUNOFF

It is anticipated that all construction activities that disturb one or more acres of land and require a Construction Stormwater General Permit will be undertaken by a contractor. Contract documents shall address the contractor's responsibility to obtain and comply with the Construction Stormwater General Permit. TESC Project Managers will monitor compliance with the Construction Stormwater General permit for their projects and promptly notify the contractor of any deficiencies.

POST-CONSTRUCTION STORMWATER MANAGEMENT

The college will comply with applicable regulations governing post construction stormwater pollution prevention.

POLLUTION PREVENTION AND GOOD HOUSEKEEPING

Pollution prevention and good housekeeping require the development and implementation of a solid plan, and employees must be trained to follow that plan. The goal is to lessen our contribution of pollutants to the Eld Inlet the maximum extent practicable by identifying and targeting activities that may affect stormwater.

A. O&M Plan

1. *Stormwater collection and conveyance systems*

Stormwater collection and conveyance systems, including catch basins, stormwater sewer pipes, open channels, culverts, structural stormwater controls, and structural runoff treatment and/or flow control facilities will be inspected annually and maintained as needed. Grounds is responsible for scheduling inspection and maintenance.

Maintenance includes cleaning out debris, pumping sediment and replacing oil collection pillows as needed, as well as any necessary repairs. Sediment has been sampled and is not typically a regulated waste under WAC 173-303 unless visibly contaminated with oil or other contaminants. Oil collection pillows will be disposed of as a dangerous waste, per WAC 173-303.

See Appendix 4 for excerpts of the 2005 Stormwater Management Manual for Western Washington, Volume V, Chapter 4.6 for additional inspection and maintenance details.

Stormwater conveyances include:

- a. oil water separators at C lot, F lot, Snyder Cove and Shops (sanitary sewer).
- b. Seminar II detention tank
- c. stormwater catch basins
- d. drainage pipes, culverts and ditches
- e. roof drains and green roofs
- f. bioswales in B and C lots

Grounds will check stormwater treatment and flow control facilities following a 24 hour storm event with a 10-year or greater recurrence interval. These include Seminar II detention tank, bioswales in B and C lots, oil water separators in C lot, F lots, Snyder Cove and Shops (sanitary sewer).

2. *Roads and parking lots*

The Grounds snow removal plan is incorporated by reference. Deicer is stored in a covered building at Shops and is applied primarily on walking surfaces when the temperature is predicted to drop below freezing. Sand is applied to both driving and walking surfaces to increase traction in snowing weather. Sand is cleaned up with a street sweeper as soon as practical.

Grounds cleans parking lots and roads routinely to remove trash, litter and debris. Debris is cleaned manually and with the street sweeper. Trash and litter is disposed with the landfill waste. Debris is disposed at the wood chip pile.

3. *Vehicle fleets*

Motor Pool maintains TESC's fleet of official vehicles, and they are stored, washed, and maintained in the Facilities Maintenance Yard. Vehicles are only washed in the designated wash bay which drains to the sanitary sewer system. Vehicles are fueled at the Motor Pool and the fuel pump has an automatic shut off. Motor Pool maintains a supply of absorbent to clean up any inadvertent spills. Vehicle repair takes place inside the Motor Pool building.

There are no floor drains in the Motor Pool building and spills are promptly cleaned up.

4. *External building maintenance*

Grounds is responsible for most exterior building maintenance. Approximately every 10 years, the exterior of the buildings are pressure washed with water and sealed with a water based concrete sealer. Pressure washing is done during summer months to limit the impact to the stormwater system.

Building Services cleans exterior windows and building entrances. Neither activity is expected to impact the stormwater system.

5. *Parks and open spaces*

Grounds maintains the exterior areas of campus. The college strives to be pesticide free and does not use herbicides to maintain the grounds. Fertilizer and other soil treatments are judiciously applied to limit runoff. Trash cans are readily available outside, and garbage and litter are picked up daily. Grass clippings and vegetative debris are informally composted. Woody debris is primarily left in the wooded areas as habitat. If woody debris needs to be removed, it is piled at the storage location on Lewis Rd behind a locked gate until a wood chipper contractor removes the pile.

6. *Material storage areas, heavy equipment storage areas, and maintenance areas.*

Heavy equipment is typically stored under cover and should not impact the stormwater system. Likewise, the maintenance areas are also under cover and should not impact stormwater. Most materials are stored under cover, however stockpiles of sand, bark and gravel are stored in exterior bunkers. Grounds routinely checks the stockpiles to ensure they are not impacted by storms.

B. Employee Training

All employees whose construction, operations, or maintenance job functions may impact stormwater quality shall be educated in the following areas. At a minimum, Facilities (Motor Pool, Grounds, Construction Services, Maintenance Services, Project Management) and Housing Facilities staff should be trained as needed.

1. The importance of protecting water quality
2. The requirements of the Permit and the Operation and Maintenance Plan
3. Inspection Procedures
4. Ways to perform their job activities to prevent or minimize impacts to water quality
5. Procedures for reporting water quality concerns, including potential illicit discharges

C. Recordkeeping

Grounds and Maintenance shall keep records for the following

- 1) preventative maintenance and repairs to stormwater systems
- 2) scheduled inspections
- 3) spill response
- 4) other potential pollution incidents

Appendix 1 Sources

Environmental Protection Agency National Pollutants Discharge Elimination System Office of Wastewater Management. (<http://cfpub.epa.gov/npdes/>)

Washington State Department of Agriculture. (<http://agr.wa.gov/>)

Washington State Department of Ecology. (<http://www.ecy.wa.gov/>)

Appendix 2- Contact List

Facilities Services

Location: Lab II Building, Room 1254

Fax: (360) 867-6791

Environmental Health and Safety

Contact: Robyn Herring

Lab II 1265

2700 Evergreen Parkway

Olympia, WA 98505

Phone: (360) 867-6111

Email: herringr@evergreen.edu

Commute Trip Reduction

Parking Services, Seminar I 2150

2700 Evergreen Parkway NW

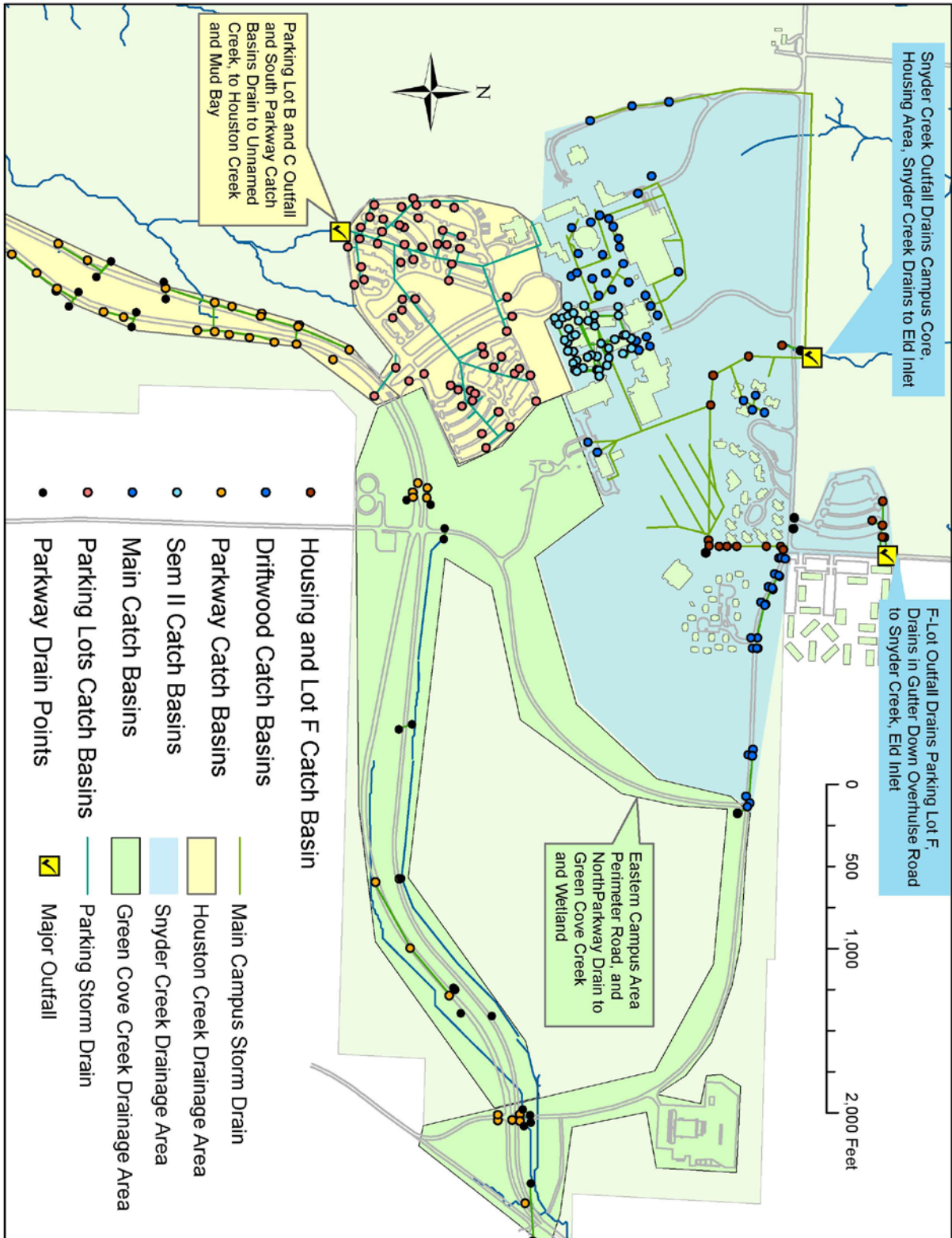
Olympia, WA 98505

Phone:

(360) 867-6352 General Info

(360) 867-6131 Employee Transportation Coordinator

Appendix 3 Map of Stormwater System



Appendix 4 Best Management Practices for Inspection and Repair

Detention Tanks

Maintenance Component	Defect	Conditions When Maintenance is Needed	Results Expected When Maintenance is Performed
Storage Area	Plugged Air Vents	One-half of the cross section of a vent is blocked at any point or the vent is damaged.	Vents open and functioning.
	Debris and Sediment	Accumulated sediment depth exceeds 10% of the diameter of the storage area for 1/2 length of storage vault or any point depth exceeds 15% of diameter. (Example: 72-inch storage tank would require cleaning when sediment reaches depth of 7 inches for more than 1/2 length of tank.)	All sediment and debris removed from storage area.
	Joints Between Tank/Pipe Section	Any openings or voids allowing material to be transported into facility. (Will require engineering analysis to determine structural stability).	All joint between tank/pipe sections are sealed.
	Tank Pipe Bent Out of Shape	Any part of tank/pipe is bent out of shape more than 10% of its design shape. (Review required by engineer to determine structural stability).	Tank/pipe repaired or replaced to design.
	Vault Structure Includes Cracks in Wall, Bottom, Damage to Frame and/or Top Slab	Cracks wider than 1/2-inch and any evidence of soil particles entering the structure through the cracks, or maintenance/inspection personnel determines that the vault is not structurally sound. Cracks wider than 1/2-inch at the joint of any inlet/outlet pipe or any evidence of soil particles entering the vault through the walls.	Vault replaced or repaired to design specifications and is structurally sound. No cracks more than 1/4-inch wide at the joint of the inlet/outlet pipe.
Manhole	Cover Not in Place	Cover is missing or only partially in place. Any open manhole requires maintenance.	Manhole is closed.
	Locking Mechanism Not Working	Mechanism cannot be opened by one maintenance person with proper tools. Bolts into frame have less than 1/2 inch of thread (may not apply to self-locking lids).	Mechanism opens with proper tools.
	Cover Difficult to Remove	One maintenance person cannot remove lid after applying normal lifting pressure. Intent is to keep cover from sealing off access to maintenance.	Cover can be removed and reinstalled by one maintenance person.
	Ladder Rungs Unsafe	Ladder is unsafe due to missing rungs, misalignment, not securely attached to structure wall, rust, or cracks.	Ladder meets design standards. Allows maintenance person safe access.
Catch Basins	See "Catch Basins"	See "Catch Basins"	See "Catch Basins"

Catch Basins

Maintenance Component	Defect	Conditions When Maintenance is Needed	Results Expected When Maintenance is performed
General	Trash & Debris	Trash or debris which is located immediately in front of the catch basin opening or is blocking inletting capacity of the basin by more than 10%.	No Trash or debris located immediately in front of catch basin or on grate opening.
		Trash or debris (in the basin) that exceeds 60% of the sump depth as measured from the bottom of basin to invert of the lowest pipe into or out of the basin, but in no case less than a minimum of six inches clearance from the debris surface to the invert of the lowest pipe.	No trash or debris in the catch basin.
		Trash or debris in any inlet or outlet pipe blocking more than 1/3 of its height.	Inlet and outlet pipes free of trash or debris.
		Dead animals or vegetation that could generate odors that could cause complaints or dangerous gases (e.g., methane).	No dead animals or vegetation present within the catch basin.
	Sediment	Sediment (in the basin) that exceeds 60percent of the sump depth as measured from the bottom of basin to invert of the lowest pipe into or out of the basin, but in no case less than a minimum of 6 inches clearance from the sediment surface to the invert of the lowest pipe.	No sediment in the catch basin
	Structure Damage to Frame and/or Top Slab	Top slab has holes larger than 2 square inches or cracks wider than 1/4 inch (Intent is to make sure no material is running into basin).	Top slab is free of holes and cracks.
		Frame not sitting flush on top slab, i.e., separation of more than 3/4 inch of the frame from the top slab. Frame not securely attached	Frame is sitting flush on the riser rings or top slab and firmly attached.
	Fractures or Cracks in Basin Walls/Bottom	Maintenance person judges that structure is unsound.	Basin replaced or repaired to design standards.
		Grout fillet has separated or cracked wider than 1/2 inch and longer than 1 foot at the joint of any inlet/outlet pipe or any evidence of soil particles entering catch basin through cracks.	Pipe is regouted and secure at basin wall.
	Settlement/Misalignment	If failure of basin has created a safety, function, or design problem.	Basin replaced or repaired to design standards.
	Vegetation	Vegetation growing across and blocking more than 10% of the basin opening.	No vegetation blocking opening to basin.
		Vegetation growing in inlet/outlet pipe joints that is more than six inches tall and less than six inches apart.	No vegetation or root growth present.

Catch Basin (con't)

Maintenance Component	Defect	Conditions When Maintenance is Needed	Results Expected When Maintenance is performed
	Contamination and Pollution	Any evidence of oil, gasoline, contaminants or other pollutants (Coordinate removal/cleanup with local water quality response agency).	No pollution present.
Catch Basin Cover	Cover Not in Place	Cover is missing or only partially in place. Any open catch basin requires maintenance.	Catch basin cover is closed
	Locking Mechanism Not Working	Mechanism cannot be opened by one maintenance person with proper tools. Bolts into frame have less than 1/2 inch of thread.	Mechanism opens with proper tools.
	Cover Difficult to Remove	One maintenance person cannot remove lid after applying normal lifting pressure. (Intent is keep cover from sealing off access to maintenance.)	Cover can be removed by one maintenance person.
Ladder	Ladder Rungs Unsafe	Ladder is unsafe due to missing rungs, not securely attached to basin wall, misalignment, rust, cracks, or sharp edges.	Ladder meets design standards and allows maintenance person safe access.
Metal Grates (If Applicable)	Grate opening Unsafe	Grate with opening wider than 7/8 inch.	Grate opening meets design standards.
	Trash and Debris	Trash and debris that is blocking more than 20% of grate surface inletting capacity.	Grate free of trash and debris.
	Damaged or Missing.	Grate missing or broken member(s) of the grate.	Grate is in place and meets design standards.

Bioswales

Maintenance Component	Defect or Problem	Condition When Maintenance is Needed	Recommended Maintenance to Correct Problem
General	Sediment Accumulation on Grass	Sediment depth exceeds 2 inches.	Remove sediment deposits on grass treatment area of the bio-swale. When finished, swale should be level from side to side and drain freely toward outlet. There should be no areas of standing water once inflow has ceased.
	Standing Water	When water stands in the swale between storms and does not drain freely.	Any of the following may apply: remove sediment or trash blockages, improve grade from head to foot of swale, remove clogged check dams, add under drains or convert to a wet biofiltration swale.
	Flow spreader	Flow spreader uneven or clogged so that flows are not uniformly distributed through entire swale width.	Level the spreader and clean so that flows are spread evenly over entire swale width.
	Constant Baseflow	When small quantities of water continually flow through the swale, even when it has been dry for weeks, and an eroded, muddy channel has formed in the swale bottom.	Add a low-flow pea-gravel drain the length of the swale or by-pass the baseflow around the swale.
	Poor Vegetation Coverage	When grass is sparse or bare or eroded patches occur in more than 10% of the swale bottom.	Determine why grass growth is poor and correct that condition. Re-plant with plugs of grass from the upper slope: plant in the swale bottom at 8-inch intervals. Or re-seed into loosened, fertile soil.
	Vegetation	When the grass becomes excessively tall (greater than 10-inches); when nuisance weeds and other vegetation starts to take over.	Mow vegetation or remove nuisance vegetation so that flow not impeded. Grass should be mowed to a height of 3 to 4 inches. Remove grass clippings.
	Excessive Shading	Grass growth is poor because sunlight does not reach swale.	If possible, trim back over-hanging limbs and remove brushy vegetation on adjacent slopes.
	Inlet/Outlet	Inlet/outlet areas clogged with sediment and/or debris.	Remove material so that there is no clogging or blockage in the inlet and outlet area.
	Trash and Debris Accumulation	Trash and debris accumulated in the bio-swale.	Remove trash and debris from bioswale.
	Erosion/Scouring	Eroded or scoured swale bottom due to flow channelization, or higher flows.	For ruts or bare areas less than 12 inches wide, repair the damaged area by filling with crushed gravel. If bare areas are large, generally greater than 12 inches wide, the swale should be re-graded and re-seeded. For smaller bare areas, overseed when bare spots are evident, or take plugs of grass from the upper slope and plant in the swale bottom at 8-inch intervals.

Baffle Oil/Water Separator

Maintenance Component	Defect	Condition When Maintenance is Needed	Results Expected When Maintenance is Performed
General	Monitoring	Inspection of discharge water for obvious signs of poor water quality.	Effluent discharge from vault should be clear with out thick visible sheen.
	Sediment Accumulation	Sediment depth in bottom of vault exceeds 6-inches in depth.	No sediment deposits on vault bottom that would impede flow through the vault and reduce separation efficiency.
	Trash and Debris Accumulation	Trash and debris accumulation in vault, or pipe inlet/outlet, floatables and non-floatables.	Trash and debris removed from vault, and inlet/outlet piping.
	Oil Accumulation	Oil accumulations that exceed 1-inch, at the surface of the water.	Extract oil from vault by vactoring. Disposal in accordance with state and local rules and regulations.
	Damaged Pipes	Inlet or outlet piping damaged or broken and in need of repair.	Pipe repaired or replaced.
	Access Cover Damaged/Not Working	Cover cannot be opened, corrosion/deformation of cover.	Cover repaired to proper working specifications or replaced.
	Vault Structure Damage - Includes Cracks in Walls Bottom, Damage to Frame and/or Top Slab	See "Catch Basins"	Vault replaced or repairs made so that vault meets design specifications and is structurally sound.
		Cracks wider than 1/2-inch at the joint of any inlet/outlet pipe or evidence of soil particles entering through the cracks.	Vault repaired so that no cracks exist wider than 1/4-inch at the joint of the inlet/outlet pipe.
	Baffles	Baffles corroding, cracking, warping and/or showing signs of failure as determined by maintenance/inspection person.	Baffles repaired or replaced to specifications.
Access Ladder Damaged	Ladder is corroded or deteriorated, not functioning properly, not securely attached to structure wall, missing rungs, cracks, and misaligned.	Ladder replaced or repaired and meets specifications, and is safe to use as determined by inspection personnel.	

Appendix 5 Visual Inspection Form



VISUAL INSPECTION FORM



Outfall Number: _____

Part 1 General Information

- Map to location is? OK Incorrect, explain in Part 4, Comments
- Date: _____ Time: _____ Inspection Crew Lead: _____
- How long since last rainfall? Raining now 0-2 days 3 or more days Unknown
- Access to end of pipe is? OK Far from road, _____ feet Steep Ground wet or soft Blocked ☒
If blocked, by what? Fence gate/unlocked Fence gate/locked Vegetation Water Other: _____

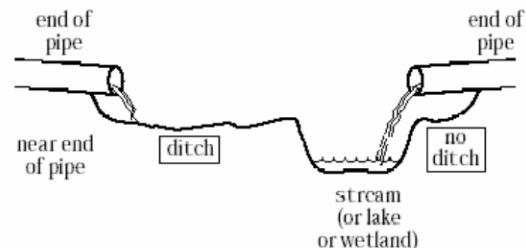
Part 2 End-of-Pipe Information

- End of pipe flows into: Lake Stream Wetland Ditch Other _____
- End of pipe submerged? No Yes *If yes, how much?* less than 25% about 50% more than 50%
- End of pipe crushed? No Yes *If yes, how much?* less than 25% about 50% ☒ almost closed ☒
- Grate on end of pipe? No Yes *If yes, is grate locked?* No Yes
If yes, is grate plugged? less than 25% about 50% ☒ almost closed ☒

Part 3 Visual Observations

- Water flowing from end of pipe? No Yes
If yes, what does water look like? Clear Colored, what color? _____ Muddy
If yes, are petroleum products present? No Yes, in the form of: Floating globs Moving sheen
- Sediment accumulation in pipe? No Yes
If yes, how much? less than 25% full about 50% full ☒ more than 50% full ☒
- Debris accumulation in pipe? No Yes
If yes, how much? less than 25% full about 50% full ☒ more than 50% full ☒
Describe debris: _____
- If end of pipe flows to a ditch, is there (near end of pipe):
 Sediment accumulation in ditch? No Yes
If yes, how much? less than 25% full about 50% full ☒ more than 50% full ☒
 Debris accumulation in ditch? No Yes
If yes, how much? less than 25% full about 50% full ☒ more than 50% full ☒
Describe debris: _____

Part 4 Comments



NOTE: If the answer to a question has this symbol ☒ next to the entry, flag this form for a supervisor's attention by placing an "X" in the box to the right.

STORMWATER INSPECTION REPORT

Inspections must be conducted by a person with the knowledge and skills to assess conditions and activities that could impact stormwater quality at the facility, and evaluate the effectiveness of best management practices required by this permit. Retain a copy of the completed and signed form.

FACILITY NAME:	INSPECTION TIME:	DATE:	
WEATHER INFORMATION:			
<ul style="list-style-type: none"> • Description of Weather Conditions (e.g., sunny, cloudy, raining, snowing, etc.): _____ • Was stormwater (e.g., runoff from rain or snowmelt) flowing at outfalls and/or discharge areas shown on the Site Map during the inspection: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Comments: _____ _____ 			
I. POTENTIAL POLLUTANT SOURCE AREA INSPECTION AND BEST MANAGEMENT PRACTICES EVALUATION			
<p>SWPPP and Site Map: Have a copy of the SWPPP and site map with you during the inspection so that you can ensure they are current and accurate.</p> <ul style="list-style-type: none"> • Is the Site Map current and accurate? • Is the SWPPP inventory of activities, materials and products current? <p>Any new potential pollutant sources must be added to the map and reflected in the <i>SWPPP Facility Assessment & Tables 2, 2A, 3 and 5</i>.</p>	Yes	No	<p>Findings and Remedial Action Documentation: Describe any findings below and the schedule for remedial action completion including the date initiated and date completed or expected to be completed.</p>

I. POTENTIAL POLLUTANT SOURCE AREA INSPECTION AND BEST MANAGEMENT PRACTICES EVALUATION

<p>Vehicle/Equipment Areas:</p> <p><i>Equipment cleaning: Check NA if not performed.</i></p> <ul style="list-style-type: none"> • Is equipment washed or cleaned only in designated areas? • Is all wash water captured and properly disposed of? <p><i>Equipment fueling: Check NA if not performed. .</i></p> <ul style="list-style-type: none"> • Are all fueling areas free of contaminant buildup and evidence of chronic leaks/spills? • Are all chemical liquids, fluids, and petroleum products, on an impervious surface that is surrounded with a containment berm or dike that is capable of containing 10% of the total enclosed tank volume or 110% of the volume contained in the largest tank, whichever is greater? • Are structures in place to prevent precipitation from accumulating in containment areas? <ul style="list-style-type: none"> ○ If not, is there any water or other fluids accumulated within the containment area? ○ Note: If containment areas are not covered to prevent water from accumulating, the SWPPP must include a plan describing how accumulated water will be managed and disposed of. 	Yes	No	NA	<p>Findings and Remedial Action Documentation:</p>
<p><i>Equipment maintenance:</i></p> <ul style="list-style-type: none"> • Are maintenance tools, equipment and materials stored under shelter, elevated and covered? • Are all drums and containers of fluids stored with proper cover and containment? • Are exteriors of containers kept outside free of deposits? • Are any vehicles and/or equipment leaking fluids? Identify leaking equipment. • Is there evidence of leaks or spills since last inspection? Identify and address. • Are materials, equipment, and activities located so that leaks are contained in existing containment and diversion systems (confine the storage of leaky or leak-prone vehicles and equipment awaiting maintenance to protected areas)? <p>Add any additional site-specific BMPs:</p> <hr/> <hr/>	Yes	No	NA	<p>Findings and Remedial Action Documentation:</p>

I. POTENTIAL POLLUTANT SOURCE AREA INSPECTION AND BEST MANAGEMENT PRACTICES EVALUATION

Good Housekeeping BMPs:	Yes	No	NA	Findings and Remedial Action Documentation:
<p>1. Are paved surfaces free of accumulated dust/sediment and debris?</p> <ul style="list-style-type: none"> • Date of last quarterly vacuum/sweep _____ • Are there areas of erosion or sediment/dust sources that discharge to storm drains? <p>2. Are all waste receptacles located outdoors:</p> <ul style="list-style-type: none"> • In good condition? • Not leaking contaminants? • Closed when is not being accessed? • External surfaces and area free of excessive contaminant buildup? <p>3. Are the following areas free of accumulated dust/sediment, debris, contaminants, and/or spills/leaks of fluids?</p> <ul style="list-style-type: none"> • External dock areas • Pallet, bin, and drum storage areas • Maintenance shop(s) • Equipment staging areas (loaders, tractors, trailers, forklifts, etc) • Around bag-house(s) • Around bone yards • Other areas of industrial activity: _____ 				

I. POTENTIAL POLLUTANT SOURCE AREA INSPECTION AND BEST MANAGEMENT PRACTICES EVALUATION

<p>Spill Response and Equipment:</p> <p>Are spill kits available, in the following locations?</p> <ul style="list-style-type: none"> • Fueling stations • Transfer and mobile fueling units • Vehicle and equipment maintenance areas <p>Do the spill kits contain all the permit required items?</p> <ul style="list-style-type: none"> • Oil absorbents capable of absorbing 15 gallons of fuel. • A storm drain plug or cover kit. • A non-water containment boom, a minimum of 10 feet in length with a 12 gallon absorbent capacity. • A non-metallic shovel. • Two five-gallon buckets with lids. <p>Are contaminated absorbent materials properly disposed of?</p>	Yes	No	NA	<p>Findings and Remedial Action Documentation:</p>
<p>General Material Storage Areas:</p> <ul style="list-style-type: none"> • Are damaged materials stored inside a building or another type of storm resistance shelter? • Are all uncontained material piles stored in a manner that does not allow discharge of impacted stormwater? • Are scrap metal bins covered? • Are outdoor containers covered? 	Yes	No	NA	<p>Findings and Remedial Action Documentation:</p>
<p>Stormwater BMPs and Treatment Structures: Visually inspect all stormwater BMPs and treatment structures devices, discharge areas infiltration and outfalls shown on the Site Map.</p> <ul style="list-style-type: none"> • Are BMPs and treatment structures in good repair and operational? • Are BMPs and treatment structures free from debris buildup that may impair function? • The permit requires Permittees to clean catch basins when the depth of debris reaches 60% of the sump depth. In addition, the Permittee must keep the debris surface at least 6 inches below the outlet pipe. Based on this, do catch basins need to be cleaned? • Are berms, curbing or other methods used to divert and direct discharges adequate and in good condition? 	Yes	No	NA	<p>Findings and Remedial Action Documentation:</p>

Observation of Stormwater Discharges: <ul style="list-style-type: none"> • Is the discharge free of floating materials, visible oil sheen, discoloration, turbidity, odor, foam or any other signs of contamination? • Water from washing vehicles or equipment, steam cleaning and/or pressure washing is considered process wastewater and is not allowed to comingle with stormwater or enter storm drains. Is process water comingling with stormwater or entering storm drains? • Illicit discharges include domestic wastewater, noncontact cooling water, or process wastewater (including leachate). Were any illicit discharges observed during the inspection? 	Yes	No	NA	Findings and Remedial Action Documentation:
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II. CORRECTIVE ACTION AND SWPPP MODIFICATIONS DESCRIPTIONS: *Additional space to describe inspection findings and corrective actions if needed. Provide brief explanation of the general location and the rationale for the additional or different BMPs.*

III. INSPECTORS SIGNATURE:

Inspector's Name – Printed	Inspector's Signature	Inspector's Title	Date