



# DPW Clean Water Program Best Management Practice (BMP) Storm Water Training For Construction Projects



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# LIST OF ACRONYMS

- BMP BEST MANAGEMENT PRACTICE
- CFR CODE OF FEDERAL REGULATION
- CWA CLEAN WATER ACT
- CWB CLEAN WATER BRANCH
- DPW-ENV DIRECTORATE OF PUBLIC WORKS, ENVIRONMENTAL DIVISION
- EPA U.S. ENVIRONMENTAL PROTECTION AGENCY
- HAR HAWAII ADMINISTRATIVE RULES
- LOA LETTER OF AUTHORIZATION
- MS4 MUNICIPAL SEPARATE STORM SEWER SYSTEM
- NGPC NOTICE OF GENERAL PERMIT COVERAGE
- NOC NOTICE OF CESSATION
- NOI NOTICE OF INTENT
- NPDES NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
- SDOH STATE DEPARTMENT OF HEALTH
- SWPPP STORM WATER POLLUTION PREVENTION PLAN



## BACKGROUND

- Under the 1972 Clean Water Act, storm water discharges are regulated through the National Pollutant Discharge Elimination System (NPDES) permit program
- In Hawaii, NPDES permits are administered by the SDOH-CWB on behalf of the federal EPA
- NPDES permits are required for construction sites larger than 1 acre or part of a greater plan.
- State regulations in HAR 11-55 appendix C contain all applicable regulations regarding construction site runoff



# HAWAII RULES

- **HAWAII REVISED STATUTES (HRS) § 342D-50(A)** states that:
  - “No person, including any public body, shall discharge any water pollutant into state waters, or cause or allow any water pollutant to enter state waters, except as in compliance with the provisions of this chapter, rules adopted pursuant to this chapter, or a permit or variance issued by the director.”
- **HRS § 342D-1** defines “water pollutant” as:
  - “Dredged spoil, solid refuse, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical waste, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, **soil, sediment**, cellar dirt and industrial, municipal, and agricultural waste.”



# WHAT IS AN MS4?

- MS4 = Municipal Separate Storm Sewer System
- A conveyance or system of conveyances (roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) designed or used for collecting or conveying storm water
- These conveyances are **not** combined with wastewater and are not treated
- The Army Garrison in Hawaii owns and operates its MS4 and has an NPDES permit from the state to discharge storm water through it
- DPW's Clean Water Program exists to protect the Army from potential violations against its permit and from illicit discharges into its MS4





# CLEAN WATER COMPLIANCE

- No “**illicit discharges**” allowed to any storm water systems
- Definition of “illicit discharge”- 40 cfr §122.26:
  - Any discharge to a municipal separate storm sewer that is not composed entirely of [storm water](#) except discharges pursuant to a [NPDES permit](#) and discharges resulting from fire fighting activities.





# EPA'S NUMBER ONE POLLUTANT

According to the EPA:

- Storm water runoff is the top cause of water pollution
- **Sediment** is the number one pollutant
- Storm water runoff from construction sites is a primary contributor to the impairment of water quality





## BY THE NUMBERS

- The table represents the erosion rates categorized by land use.
- Notice that **construction** (along with mining) is the number one contributor to sediment pollution

### SOIL EROSION RATE

LAND USE	EROSION RATE Tons/SqMi/Yr	RATIO RELATIVE TO FOREST
Forest	24	1
Grassland	240	10
Abandoned Surface Mine	2,400	100
Cropland	4,800	200
Harvested Forest	12,000	500
Active Surface Mine	48,000	2,000
Construction	48,000	2,000



# “IT’S JUST DIRT”

## Why is **sediment** an illicit discharge?

- **ALGAE BLOOMS** Nutrients transported by sediment can activate blue-green algae that release toxins into the water
- **FLOODING** Sediment fills up storm drains and catch basins, clogging their conveyance and increasing potential for flooding
- **RECREATION** Sediment deposits in rivers can alter the flow of water and reduce water depth, which makes navigation and recreation more difficult
- **STARVATION** Sediment causes turbidity/murky water. Turbidity blocks vital sunlight for aquatic plants. Turbidity impedes animal vision and prevents them from hunting.
- **DEATH** Sediment absorbs heat from sunlight causing warmer water and lowers dissolved oxygen (DO) levels. Low DO causes suffocation and death for aquatic life.



# CONSEQUENCES OF NON-COMPLIANCE

- DPW does not issue citations, but will notify Garrison leadership of issues if necessary.
- A warning letter may be issued by DOH: Notice of Violation or notice of potential violation letter.
- Field Citation: DOH may penalize infractions without an NOV
- Administrative / civil penalties enforced by DOH - notice and finding of violation
  - State law specifies **monetary penalties up to \$25,000 per day per violation.**
- Criminal enforcement (for deliberate illicit discharges)
  - **Monetary penalties up to \$50,000 per day per violation and jail time possible.**
- Civil suits
  - **NGOs have sued contractors for damages for amounts in the hundreds of thousands of dollars.**



# CONSEQUENCES OF NON-COMPLIANCE: WHO GETS THE BILL?

- **The permit holder** for NPDES permitted projects.
- **The general contractor** for not maintaining BMP's or for having prior violations of a similar nature.
- **The individual responsible** for discharge.
- “It is the prerogative of the SDOH-CWB to assign responsibility for the enforcement action. However, the attorney general may also assign responsibility for enforcement actions.”



# LETTER OF AUTHORIZATION

- All NPDES projects within the USAG-HI MS4 permitted area require a Letter Of Authorization (LOA) from DPW (allow 10 days for processing).
- The LOA is a written equivalent of a permit that provides approval for drainage connections to the USAG-HI MS4 and the discharge of surface storm water runoff associated with construction activity.
- Contractors **CANNOT** start construction within the MS4 without an LOA issued by USAG-HI.





# GENERAL PERMIT REQUIREMENTS

## SWPPP DOCUMENT (CHAPTER 11-55, APPENDIX C, SECTION 7):

- A Storm Water Pollution Prevention Plan (SWPPP) is required for all NPDES projects on USAG-HI property, prior to submitting a NOI form C to SDOH.
- The SWPPP must be reviewed and approved by DPW's Clean Water Program
- DPW-ENV will only issue an LOA after the SWPPP is approved (it must contain all items listed in HAR 11-55 appendix C section 7.2)

# DEWATERING

## APPENDIX C - APPENDIX G

- HAR 11-55 Appendix C Section 5.1.3.3. Dewatering Practices
  - The permittee is prohibited from discharging ground water or accumulated storm water that is removed from excavations, trenches, foundations, vaults, or other similar points of accumulation. Dewatering cannot be discharged into storm drains.
  - Dewatering pits on site are allowed.
- HAR 11-55 Appendix G
  - Dewatering practices are not authorized under appendix c.
  - An Application for dewatering must be submitted to DOH for coverage.
  - This general permit covers discharges from the dewatering process of construction activities of any size, including treated storm water discharges, upon compliance with the applicable general permit requirements.
- <https://health.hawaii.gov/cwb/permitting/general-permits/>

**\*\*NEVER PUMP INTO A STORM DRAIN WITHOUT DPW APPROVAL\*\***





# SWPPP REQUIREMENTS

- A current SWPPP must be available onsite and include all sections from HAR 11-55 C section 7.2), including:

Total site area in acres

A detailed construction schedule

Legible, detailed site maps

All potential site pollutants

Spill plan with the USAG-HI spill number 656-1111

Staff BMP training certificates

Inspection records

Specific BMP installation designs

- Use the City and County of Honolulu BMP manual for designs, if appropriate:

[https://www.honolulu.gov/rep/site/dfmswq/library/BMP\\_manual\\_2011-11.pdf](https://www.honolulu.gov/rep/site/dfmswq/library/BMP_manual_2011-11.pdf)

- Use the state's template:

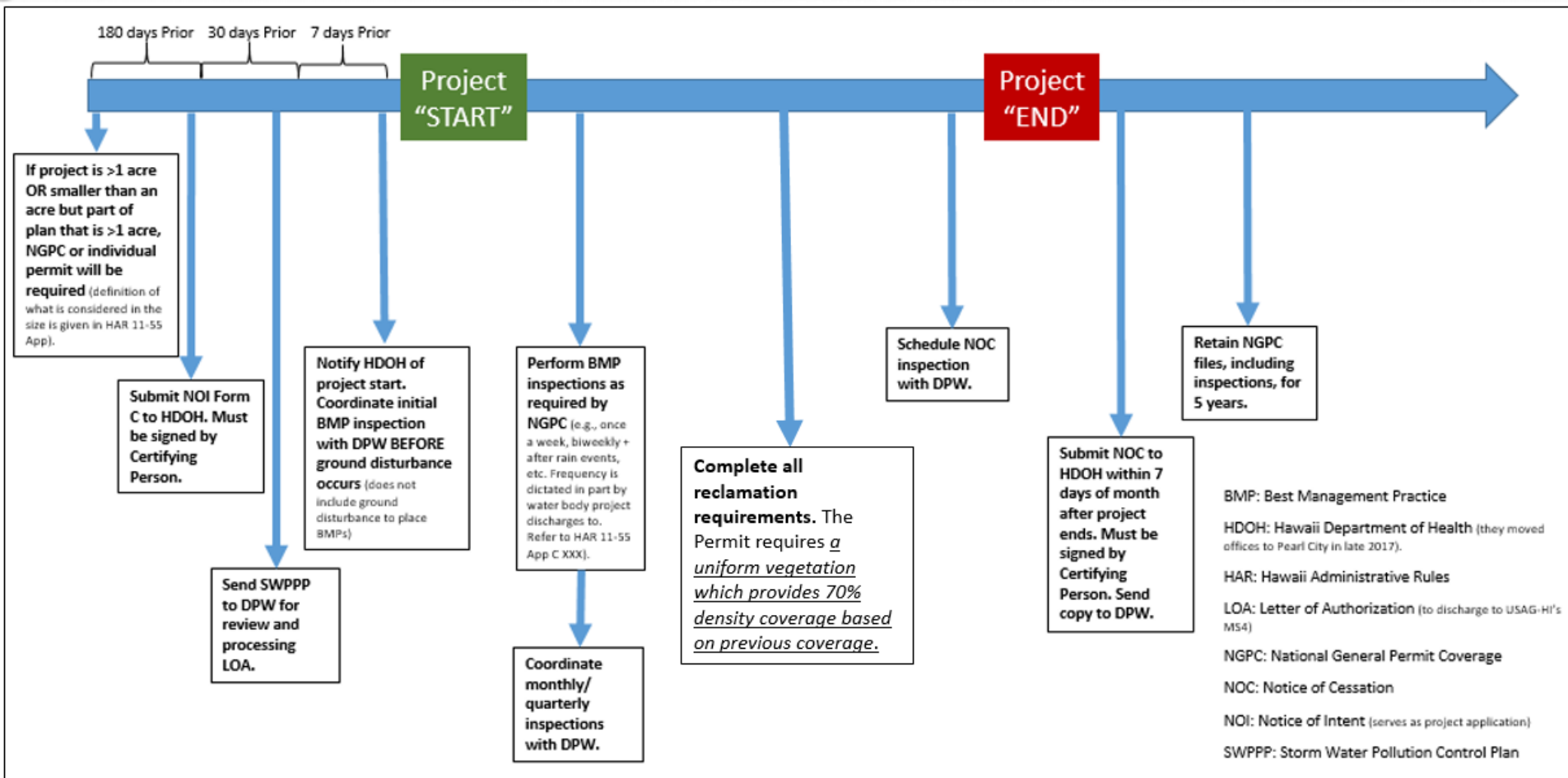
[https://www.honolulu.gov/rep/site/ddc/civil\\_division\\_downloads/SP\\_195\\_env\\_pollutn\\_c\\_ontrl\\_attach\\_a-swppp\\_template.pdf](https://www.honolulu.gov/rep/site/ddc/civil_division_downloads/SP_195_env_pollutn_c_ontrl_attach_a-swppp_template.pdf)

- Changes to site plan and site conditions must be documented in a modification log.



# CONSTRUCTION PROCESS WITH DPW-ENV:

1. File a NPDES permit NOI form C via the SDOH e-permitting portal 180 days before the start of construction
2. Prepare and submit a SWPPP to DPW-ENV. Preparing a SWPPP is a requirement for filing a NPDES permit; therefore have SWPPP available for submitting to DOH *if requested* for their permit review. Contractor has 48-72 hour to supply SWPPP to DOH if requested.
3. After review and approval of the SWPPP, DPW-ENV will issue an LOA
4. Install all erosion and sediment BMPs according to the specifications of the SWPPP
5. **Notify DPW-ENV before the initiation of ground-disturbing activities (after BMP's have been installed) to conduct an initial site inspection**
6. Maintain BMPs as needed, conduct site inspections according to SWPPP schedule, and maintain all documents on site
7. Complete all reclamation requirements as per the permit
8. File a NOC upon completion







- [illegible]



# **EROSION CONTROL (KEEPING THE DIRT IN PLACE)**

1. Minimize disturbed area and protect natural features and soil
2. Phase construction activity
3. Control storm water flowing onto and through the project
4. Stabilize soils promptly
5. Protect slopes



# **SEDIMENT CONTROL (THE SECOND LINE OF DEFENSE)**

1. Protect storm drain inlets
2. Establish perimeter controls
3. Retain sediment on-site and control dewatering practices
4. Establish stabilized construction exits
5. Inspect and maintain BMPs





# CONTRACTOR INSPECTIONS

## SWPPP PLAN INSPECTIONS/ DOCUMENTATIONS (HAR 11-55 C, SECTION 9.1.2)

- The contractor performs inspections on site and keeps records in the SWPPP
- A ***qualified person*** shall conduct a site inspection in accordance with one of the two schedules (next slide)
- A ***qualified person*** is a person knowledgeable in the principles of erosion and sediment controls, pollution prevention, the site specific SWPPP and NPDES general permit requirements
- **Viewing this slide deck qualifies you (print your certificate at the end)**
- Keep current copies of all inspection reports and photos onsite



# CONTRACTOR INSPECTIONS CONT.

Inspections only required during normal working days. Choose one of the following schedules and specify in the SWPPP:

- At least once every 7 calendar days
- Once every 14 calendar days and within 24 hours of any rain event of 0.25 inches or greater. Use either a rain gauge on the site or weather station data (NOAA, weather underground) and record precipitation data in the SWPPP
- At least once every 7 calendar days and within 24 hours of the occurrence of a storm event of 0.25 inches or greater if the receiving water body is listed as impaired (e.g., the Waikele Stream)



# DPW INSPECTIONS

- DPW will conduct its own regular, announced inspections and generate an inspection report with a record of any violations or deficiencies found on site
- The permittee is required to stop, reduce, or modify construction, or implement new or revised BMPs as needed to stop or prevent a water quality violation
  - **Minor Deficiency** – usually a documentation issue: does not pose a discharge threat, but is not in compliance with the permit. Shall be corrected or addressed as soon as possible, but no later than 7 calendar days after the inspection.
  - **Major Deficiency** – a significant issue that could result in a discharge. Shall be corrected or addressed as soon as possible, but no later than 7 calendar days after the inspection or before next forecasted precipitation, whichever is sooner.
  - **Critical Deficiency** – poses an immediate risk of discharge. Shall be corrected or addressed before the close of business on the day of the inspection. These must be reported to DOH by DPW.





# DPW-ENV INSPECTION PROCEDURES

- DPW-ENV will contact COE project POC or site superintendent to schedule an inspection, (inspections can also be unannounced)
  - DPW-ENV will meet with contractor and COE at site trailer to review SWPPP, maps, inspection documentation, training logs etc.
  - Walk the site to inspect BMP's, photograph noncompliance issues, debrief with group, findings will be discussed
  - Inspection report with findings and photos will be emailed to contractor, COE representatives and DPW-ENV program manager within 2 calendar days
- All deficiencies shall be corrected asap or by no later than 5 calendar days after the inspection. **\*ENFORCEMENT PROCEDURES WILL BE APPLIED IF NOT RECEIVED!**



# MOST COMMON DEFICIENCIES

1. Torn or flattened filter socks, or silt fences that are falling down
2. Stockpiles that are not protected
3. Concrete washouts full of rain, open buckets of unknown material
4. Sediment track-out onto public roads
5. Site maps that are not up-to-date

**Walk your site before a DPW inspection**

# SEDIMENT CONTROL

- Never place silt fence in concentrated flow areas
- Place along the contour with a slight turn up gradient at the ends
- Ensure stakes are placed on the proper side, opposite of flow direction.





## SEDIMENT CONTROL INLET PROTECTION

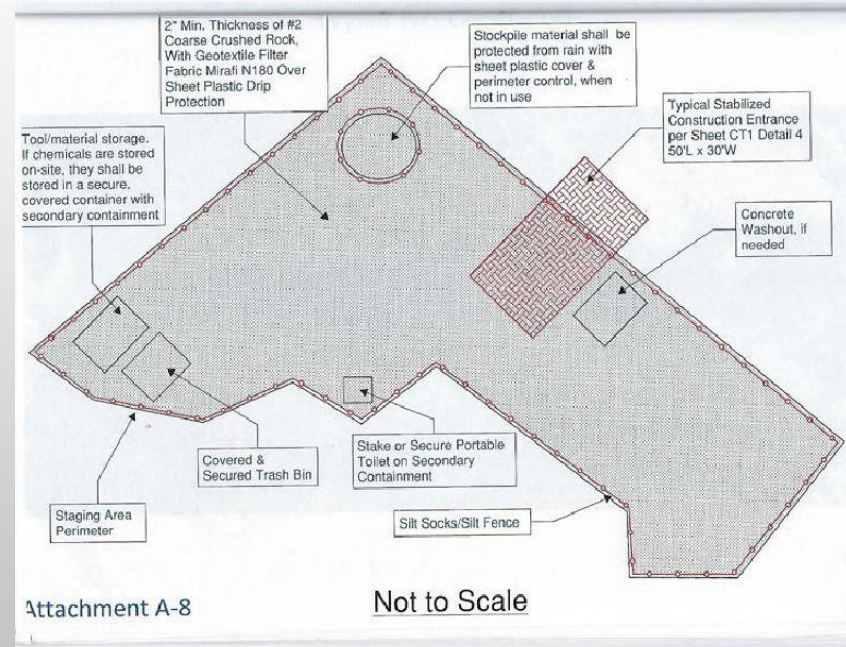
- Install inlet protection measures that remove sediment from the discharge prior to entry into the storm drain inlet
- Many methods and products available
- Clean or replace devices before sediment accumulates to  $\frac{1}{2}$  *the height* of any BMP
- Inlet protection BMPs can be removed during heavy rainfall to prevent flooding





# COSAS AND LAYDOWN YARDS

- The COSA design must be specified in the SWPPP
- COSAs and all the contents must have appropriate BMP protection







# STOCKPILE PROTECTION

- Stockpile protection is not the same as site perimeter control. You need both.
- Cover stockpiles when they are not actively used to reduce runoff.





# PROPER DISPOSAL OF CONCRETE WASTE

- Concrete washout should not be placed in stockpiles
- After washout dries, concrete should be placed in designated dumpster for hauling off site
- Concrete washout should not come in contact with the ground





# SEDIMENT CONTROL



- Maintain your stabilized construction exit to reduce sediment track-out
- Sweep paved streets at the end of day if necessary
- Major track-out issues onto public roads require that work be **stopped**. Have a plan in case sweeping or clean-up is needed after hours or on weekends.
- **DO NOT wash sediment off the street with water**—dry sweep only





# ADDITIONAL POLLUTANT SOURCES

- Vehicle and equipment maintenance/fueling
- Concrete waste management
- Material storage and use
- Stockpile management
- Solid and hazardous waste management



Source: Hawaiian Earth Products





# SECONDARY CONTAINMENT

- All chemicals (fuel, oil, hydraulic fluid, paint, sealants, etc..) Must be stored in water-tight containers and provide either cover (temp roofs, conex) or a spill berm, deck, containment pallet

**\*\*ALL SPILLS OF ANY QUANTITY MUST BE REPORTED TO THE DPW ENVIRONMENTAL SPILL LINE (808) 656-1111**







## ● POST-CONSTRUCTION STABILIZATION

HAR Chapter 11-55, Appendix C, 5.2.2.1.1.1 – *If the permittee is vegetatively stabilizing any exposed portion of the site through the use of seed or planted vegetation, the permittee shall provide established uniform vegetation which provides 70 percent or more of the density of coverage that was provided by vegetation prior to commencing earth disturbing activities.*

- BMPs designed to prevent erosion of the seeded area should be installed;
- Routine storm water inspections are required as per the permit until 70% uniform vegetative growth is achieved. A reduced inspection schedule is authorized as per the permit.
- **Have a plan for final stabilization.** BMPs must be maintained and inspected while the grass is growing (until 70% coverage is achieved), even if construction activities are finished. The permit cannot be closed out until stabilization is complete.



## ● NOTICE OF CESSATION (NOC)

- DPW-ENV will conduct a final inspection to ensure all BMP's are removed and required reclamation has been achieved.
- Submit a NOC form through SDOH e-permitting portal when all construction activities have ceased.
- Submission of a NOC constitutes that the owner is no longer authorized to discharge from the site under the NPDES program.
- Must be signed by the person whom the permit was issued to.
- Send a copy of the NOC to DPW-ENV.



# RESOURCES

- DPW ENV CLEAN WATER PROGRAM WEBSITE  
[HTTPS://HOME.ARMY.MIL/HAWAII/INDEX.PHP/GARRISON/DPW/CLEAN-WATER-PROGRAM](https://home.army.mil/hawaii/index.php/garrison/dpw/clean-water-program)
- STATE DOH CLEAN WATER BRANCH SITE  
[HTTP://HEALTH.HAWAII.GOV/CWB/](http://health.hawaii.gov/cwb/)

# Questions?

DPW Environmental  
Clean Water Program



Melissa Evans-Shontofski, Program Mgr: (808) 656-7001

Dave Anderson: (808) 656-3015

Karen Frutche: (808) 656-3317

Lisa Bledsoe: (808) 656-3088

Megann Santana: (808) 656-3086



# Mahalo!

## References:

NPDES General Permit, Chapter 11-55 Appendix C. Effective: December 2019

Department of Environmental Services, City and County of Honolulu.

“Storm Water Best Management Practice Manual: Construction.” November 2011.

Available online at:

[http://www.cleanwaterhonolulu.com/storm/learning\\_center/BMP\\_manual\\_2011-11.pdf](http://www.cleanwaterhonolulu.com/storm/learning_center/BMP_manual_2011-11.pdf)

# CERTIFICATE

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This is to certify that

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Full name (print)

has completed the DPW Environmental Construction  
BMP Storm Water Training

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Signature

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Date

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