January 24, 2019



Construction Site Requirements

General Construction Storm Water Permit

& MS4 Phase II Permit

Yuba County Government Center Board of Supervisors Chambers

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- Construction Sites are regulated both under the General Construction Permit and under the MS4 Phase II Permit.
- Projects that disturb one or more acres of soil or less than one acre but are part of a larger common plan of development are covered under the General Construction Permit.
- Section E.10 of the MS4 Phase II Permit covers the Construction Site Storm Water Program for the unincorporated, but urbanizing areas in Yuba County.



Construction Sites regulated under a Phase II MS4 Permit must also use Post-Construction Measures:

- Implement site design measures for projects that create or replace between <u>2,500 and 5,000</u> square feet of impervious surface (includes homes);
- Implement site design, source control, runoff reduction, stormwater treatment, and baseline hydromodification management for "*Regulated*" projects that create or replace over <u>5,000 square feet</u> of impervious surface.

Projects that fall under the General Construction Permit must submit:

- Notice of Intent (NOI);
- Annual Fee;
- Site Map;
- Storm Water Pollution Prevention Plan (SWPPP); and
- Construction Site Risk Calculation (determines extent of monitoring and sampling).





There are three steps to determining the Project Level Risk. These steps are:

- Determine the Receiving Water Risk;
- Determine the Sediment Risk; and
- Determine Project Risk Level as shown below:

Receiving Water		Sediment Risk	
Risk	Low	Medium	High
Low	Project Risk Level 1	Project Risk Level 2	Project Risk Level 2
High	Project Risk Level 2	Project Risk Level 2	Project Risk Level 3
31 o 2 5		231 6 2 5 S	S. 679.8.9

Receiving Water Risk:

The receiving water risk is **HIGH** if the receiving water body is on the 303(d) list for impaired water bodies <u>OR</u> is designated as having the beneficial uses of COLD and SPWN and MIGR.

Otherwise, receiving water risk is LOW.



Sediment Risk:

Construction sites with an estimated soil loss of less than 15 tons / acre is considered low sediment risk, between 15 and 75 tons / acre is medium sediment risk, and over 75 tons / acre is high sediment risk. See Revised Universal Soil Loss Equation (RUSLE).

Reference CASQA's Stormwater Best Management Practice Handbook for Construction, Section 2.2.2.1

Revised Universal Soil Loss Equation (RUSLE):

A = (R) (K) (LS) (C) (P) = soil loss in tons / acre

- R = rainfall-runoff erosivity factor (EPA calculator)
- K = soil erodibility factor (from SMARTS GIS map)
- LS = length-slope factor (from SMARTS)
- C = Cover factor (assume to be 1.0)
- P = Management operations and support practices (assume P = 1.0)

https://www.epa.gov/npdes

Construction Sites regulated under the General Construction Permit must also:

- Employ a Qualified SWPPP Developer (QSD) to prepare the SWPPP;
- Obtain a Waste Discharger Identification (WDID) number before beginning construction;
- Employ a Qualified SWPPP Practitioner (QSP) to implement the SWPPP during construction;
- Conduct monitoring and report monitoring data.



- Construction sites regulated under the General Construction Permit (GCP) must prepare and implement a SWPPP before construction begins.
- Construction projects <u>less than five acres</u> do not need to prepare a SWPPP if they qualify for a low rainfall erosivity waiver. Projects with an R factor less than 5 qualify for the waiver.
- Construction projects regulated under an MS4 Phase II Permit must prepare and implement either a SWPPP or an *Erosion and Sediment Control Plan*.



There are monetary penalties for violating the requirements of the General Construction Permit or the MS4 – Phase II permit:

- State Maximum Amounts are <u>\$10,000 per day</u>, plus <u>\$10/gallon</u> of sediment-laden or polluted water discharged for each violation.
- Federal Amounts up to <u>\$27,500 per day</u> can be imposed for UNINTENTIONAL violation, up to <u>\$55,000 per day</u> for knowing violation, in addition to criminal liability and cleanup costs.

Building Department

Building Inspectors: Currently required to:

- Maintain a list of all construction projects that are issued permits. List includes contact information, site location, job description including square footage of impervious surface replaced or installed, and dates for the projects;
- 2. Maintain a checklist to review erosion and sediment control plans;
- 3. Use a checklist or inspection form during inspections to document compliance with the permit requirements;

Building Department

Building Inspectors: Are also required to:

- 4. Maintain list of inspections conducted to ensure all BMPs are in place, and a description of how inspections were prioritized;
- 5. Document the site design measures implemented for all projects that create and/or replace between 2,500 and 5,000 square feet of impervious surface;
- Describe the site design, source control, runoff reduction, treatment, and baseline hydromodification management BMPs implemented for all "Regulated Projects; "

Building Department

Building Inspectors: must also provide:

- 7. A description of how Regulated Projects are required to accept responsibility for the O&M of structural control measures; and
- 8. A checklist for road projects and LUPs that requires Low Impact Development Standards as described in the Permit.



Construction Inspection Checklist

WDID# <u>5S58C380666</u> DATE: <u>November 30, 2018</u>			
PROJECT NAME: Swamp Grove Estates			
NPDES INSPECTOR: Daniel W. Peterson, P.E.			
CONTRACTOR: Messy Builders, Inc.			
TYPE OF INSPECTION (CHECK ONE): PRE-JOB: ACTIVE CONSTRUCTION: X POST-JOE	3:		
SITE STATUS (CHECK ONE): ACTIVE: X INACTIVE: COMPLETED			
STAGE OF CONSTRUCTION: NOT STARTED: GRADING / UTILITY INSTALL: ROADWOF	RK: VERTICAL: X	LANDSCAP	
PROJECT RISK LEVEL: WAIVER/EXEMPT: RISK/TYPE 1: RISK/TYPE 2: X RISK/TYPE 3:			
IF ANY ANSWER IS NO, EXPLAIN DEFICIENCIES AND LIST CORRECTIVE ACT	IONS ON THIS FOR	М.	
SITE CONDITION: IS SWPPP BINDER AND MAP ON SITE?:	YES	X NO	N/A
IN COMPLIANCE WITH SUBMITTED SWPPP?	YES	X NO	N/A
IS SUBMITTED PLAN UPDATED AND MAINTAINED?	YES	XNO	N/A
SEDIMENT CONTROL			
1. Are sediment control measures, Best Management Practices (BMPs), identif	fied		
in the SWPPP such as silt fence, straw bale dikes, hydroseeding, etc., in pla	ce? YES	X NO	N/A
2. Are implemented BMPs effective?	YES	X NO	N/A
3. Are implemented BMPs maintained?	YES	X NO	N/A
4 Are changed to DMDs noted on CM/DDD man at in hinder?	VEC	VNO	

Best Management Practices (BMPs)



Best Management Practice (BMP) Objectives:

Control Erosion and Discharge of Pollutants by:

- Controlling Site Perimeter (prevent disturbing land outside project limits);
- Minimizing Disturbed Areas;
- Stabilizing Disturbed Areas;
- Protecting Slopes and Channels; and
- Retaining Sediment

Best Management Practice (BMP) Objectives:

Manage Non-Stormwater Discharges by:

- Practicing Good Housekeeping;
- Containing Materials and Wastes.



Construction BMP Categories:

- 1. Erosion Control (EC)
- 2. Sediment Control (SE)
- 3. Wind Erosion Control (WE)
- 4. Tracking Control (TC)
- 5. Non-Stormwater Management (NS)
- 6. Waste Management and Materials Pollution Control (WM)

(also required under Phase II MS4 Permit, Section E.10)



Erosion Control: (CASQA Construction Handbook, Section 3)

- Erosion Control BMPs are source control BMPs that protect the soil from being detached by rainfall, flowing water, or wind.
- All inactive disturbed soil areas and most active areas must be protected from erosion prior to onset of rain.



Erosion Control BMPs:

BMP #	BMP Name		BMP #	BMP Name
EC-1	Scheduling	-	EC-9	Earth Dikes & Drainage Swales
EC-2	Preserve Existing Vegetation		EC-10	Velocity Dissipation Devices
EC-3	Hydraulic Mulch		EC-11	Slope Drains
EC-4	Hydroseeding		EC-12	Stream-bank Stabilization
EC-5	Soil Binders		EC-13	
EC-6	Straw Mulch		EC-14	Compost Blankets
EC-7	Geotextiles & Mats		EC-15	Soil Preparation / Roughening
EC-8	Wood Mulching		EC-16	Non-vegetative Stabilization

Sediment Control: (CASQA Construction Handbook, Section 3)

- Sediment Control BMPs are treatment BMPs that trap soil particles after they have been detached and moved by rain, flowing water, or wind;
- The GCP requires that sediment controls be established and maintained at all sites;
- Sediment controls are most effective when used in conjunction with erosion control BMPs.

Sediment Control BMPs:

BMP #	BMP Name	BMP #	BMP Name
SE-1	Silt Fence	SE-8	Sandbag Barrier
SE-2	Sediment Basin	SE-9	Straw Bale Barrier
SE-3	Sediment Trap	SE-10	Storm Drain Inlet Protection
SE-4	Check Dam	SE-11	Active Treatment Systems
SE-5	Fiber Rolls	SE-12	Manufactured Linear Sediment Controls
SE-6	Gravel Bag Berm	SE-13	Compost Socks and Berms
SE-7	Street Sweeping & Vacuuming	SE-14	Biofilter Bags

Wind Erosion BMPs:

BMP #	BMP Name
WE-1	Wind Erosion Control
	Philip Bay
-4-	

Tracking Control BMPs:

BMP #	BMP Name
TC-1	Stabilized Construction Entrance/Exit
TC-2	Stabilized Construction Roadways
TC-3	Entrance/Outlet Tire Wash

Non-Stormwater BMPs:

BMP #	BMP Name	BMP #	BMP Name
NS-1	Water Conservation	NS-9	Vehicle & Equipment Fueling
NS-2	Dewatering Operations	NS-10	Vehicle & Equip Maintenance
NS-3	Paving & Grinding	NS-11	Pile Driving Operations
NS-4	Temporary Stream Crossing	NS-12	Concrete Curing
NS-5	Clear Water Diversion	NS-13	Concrete Finishing
NS-6	Illicit Connection/Discharge	NS-14	Material over Water
NS-7	Potable Water / Irrigation	NS-15	Demolition adjacent to Water
NS-8	Vehicle & Equipment Cleaning	NS-16	Temporary Batch Plants
			26

BMP Selection & Design - Subdivisions

Approved Tentative Maps and Signed Improvement Plans are complete once a discretionary project has a tentative map application (including improvement plans) that is deemed complete by a local agency.

If the discretionary project has a tentative map application or development application deemed complete prior to 1 July 2015, it is not subject to the Post Construction Standards of the Small MS4 Permit.



Point to remember :

 Owners or developers must submit (1) calculation sheets for design volume of volumetric BMPs <u>and</u> (2) Post Construction Worksheets for every building permit.

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		What is the distance	e from Sacra	mento?	Deddien	40	Enter miles		
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MS4 Permit, Section E.12: Post-Construction BMPs

Treatment BMPs and Hydromodification Measures:

- For regulated projects, after implementing Site Design BMPs, remaining <u>runoff from impervious</u> <u>surfaces must be directed to BMPs that infiltrate,</u> <u>evapotranspire, or bioretain the runoff</u> from an 85th percentile storm.
- Hydromodification management measures maintain the pre-project flow rate for projects in the Sacramento Valley. Compliance determined by using the Post-Construction Water Balance Calculator.

Post Construction Standards

Post-Construction Standards:

- Require replication of pre-project water balance up to the 85th percentile rain event;
- Emphasis on Low Impact Development;
- Projects replicate preproject time of concentration.







POST-Construction Standards plan

A GUIDANCE DOCUMENT ON STORM WATER POST-CONSTRUCTION DESIGN MEASURES FOR DEVELOPERS AND PLAN CHECKERS

Points to remember when choosing BMPs:

- BMPs vary by how effective they are, how long they will last, and how much they cost per acre of disturbed soil. Therefore, designers must consider performance requirements, schedule and cost.
- Follow the guidelines from the CASQA Construction Handbook!
- Different BMPs may be required at different times during construction since both activities and weather are subject to change.

Inspection & Monitoring

Rain Event Action Plan



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Rain Event Action Plan (REAP)

Qualifying Rain Event:

- Qualifying Rain Event triggered;
 - Rain event that produces 0.5" or more of precipitation with period of 48 hours or more between rain events;
 - Pre-rain monitoring within 48 hours of predicted rain event (Prepare REAP if probability <u>></u> 50%);
 - Post-rain monitoring within 48 hours after conclusion;
 - Conduct during normal construction site business hours.

Rain Event Action Plan

A Rain Event Action Plan (REAP) is:

- Developed by QSP for Risk Level 2 & 3 projects;
 - Address, risk level;
 - Site stormwater manager information;
 - Erosion and sediment control provider information;
 - Stormwater Sampling Agent information;
 - Activities associated with current construction phase;
 - Contractor information (by trade); and
 - Any suggested actions.

Future Stormwater Regulations

What the Future Holds



Future Stormwater Regulations

Trash Amendments (Adopted April, 2015):

- Industrial and construction NPDES permittees shall eliminate all trash > 5mm in diameter from storm water discharges and authorized non-storm water discharges. Prohibition includes discharges associated with the site, as well as any additional space such as a parking lot.
- BMPs include catch basin inserts, vortex separation systems, trash nets, Gross Solids Removal Devices, Litter Laws, Street Sweeping, and Public Education.

Future Stormwater Regulations

Trash Amendments (Adopted April, 2015):

- <u>NPDES permittees</u> required to select Track 1 or Track 2 Compliance Pathway in September 2017.
- <u>NPDES permittees</u> required to submit an updated Jurisdictional Map (Track 1) or Implementation Plan (Track 2) by December 2018.
- <u>NPDES permittees</u> required to be in full compliance no later than **December 2030**. This includes retrofitting all existing urban areas.

Construction Stormwater Regulations

Questions



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