CONTRA COSTA CLEAN WATER PROGRAM

CONSTRUCTION INSPECTIONS WORKSHOP

MRP Provision C.6

November 14, 2019

LARRY WALKER ASSOCIATES
Science. Policy. Solutions.

Logistics and Disclaimer

Cell phones

- Please silence them

Restrooms

Questions

- Ask as we go along

- The mention or image of commercial products or services should not be construed as an actual or implied endorsement or recommendation.

Workshop Agenda

Session	Speaker	Time
Check-in and complete survey		8:00-8:30
Introduction and Welcome	Karin Graves	8:30-8:40
MRP Provision C.6 Refresher	Sandy Mathews	8:40-9:00
Stormwater Protection Principles for Construction Sites and BMP Review	Sandy Mathews	9:00-9:45
Break		9:45-10:00
Inspections and Documentation Best Practices and Tools	Sandy Mathews	10:00-10:15
Real Stories from the Field	David Klapperich Neil Mock	10:15-11:00
Regional Water Board Perspective – Inspections and Issues	Maggie Monahan	11:00-11:30
Wrap-up – questions, survey, and evaluation		11:30-Noon

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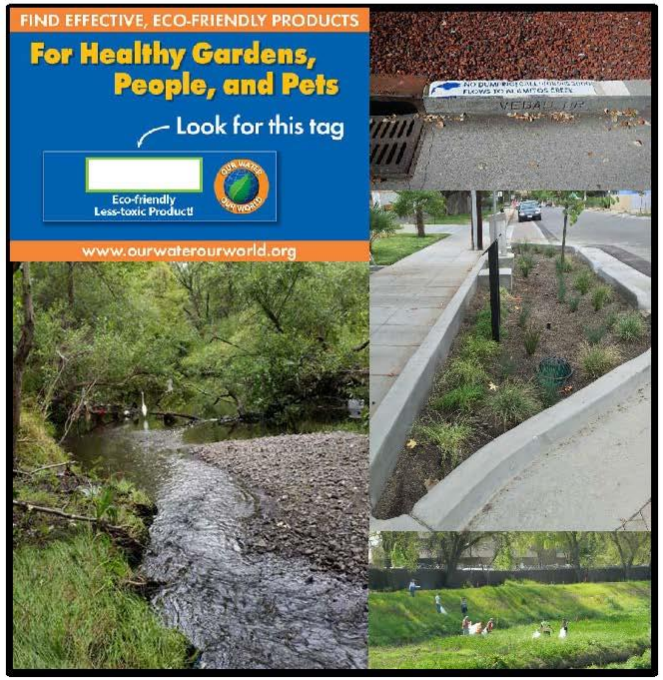
MRP PROVISION C.6 REFRESHER

Municipal Regional Permit (MRP) 2.0

- All local jurisdictions are responsible for implementing programs to protect the quality of discharges from their stormwater drainage systems
- Provision C.6 of the MRP requires Permittees implement a construction site control program to prevent construction site discharges of pollutants and impacts on receiving waters

California Regional Water Quality Control Board
San Francisco Bay Region
Municipal Regional Stormwater NPDES Permit

Order No. R2-2015-0049
NPDES Permit No. CAS612008
November 19, 2015



Construction Site Control Requirements

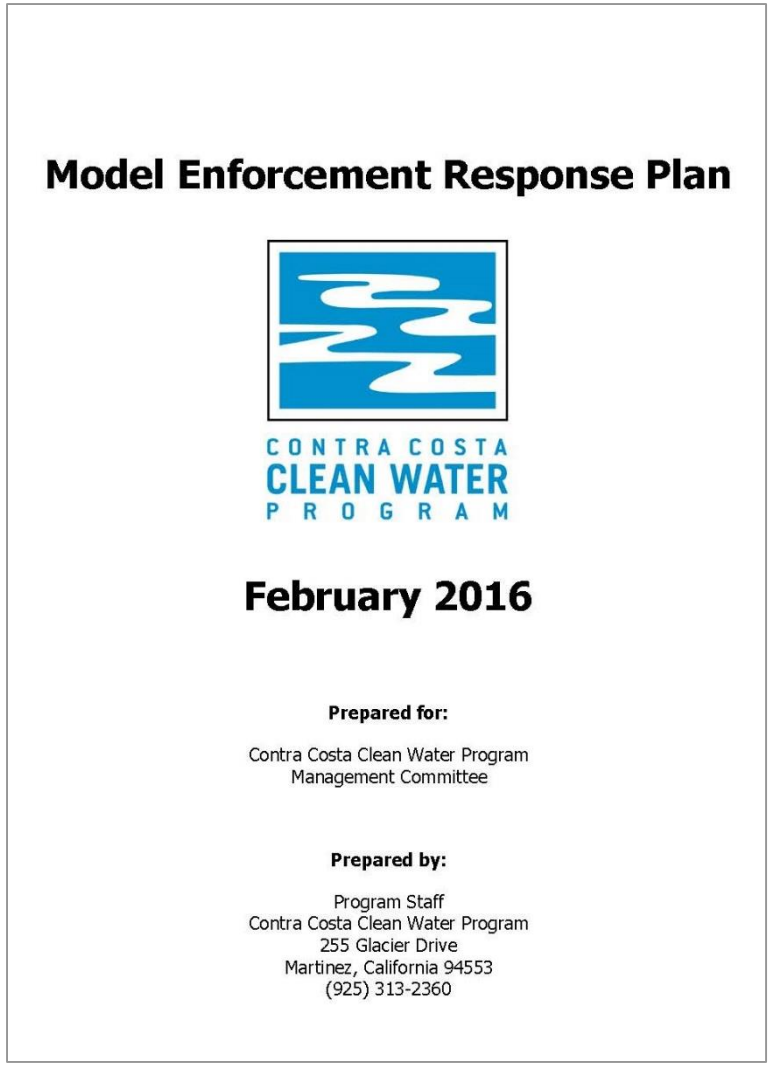
- C.6.a – Legal Authority
- C.6.b – Enforcement Response Plan (ERP)
- C.6.c – Best Management Practices Categories
- C.6.d – Plan Approval Process
- C.6.e – Inspections, tracking and reporting
- C.6.f – Staff Training

C.6.a – Legal Authority

- Each jurisdiction is required to have the legal authority and ability to prevent discharges of pollutants and implement progressively stricter enforcement
  - Require effective stormwater pollutant controls
  - Oversee and inspect projects
  - Require expedient cleanup

C.6.b – Enforcement Response Plan (ERP)

- ERP provides guidance for inspectors on initiating and escalating enforcement actions
- Model prepared by the CCCWP can be customized by each municipality


Model Enforcement Response Plan

CONTRA COSTA CLEAN WATER PROGRAM

February 2016

Prepared for:

Contra Costa Clean Water Program
Management Committee

Prepared by:

Program Staff
Contra Costa Clean Water Program
255 Glacier Drive
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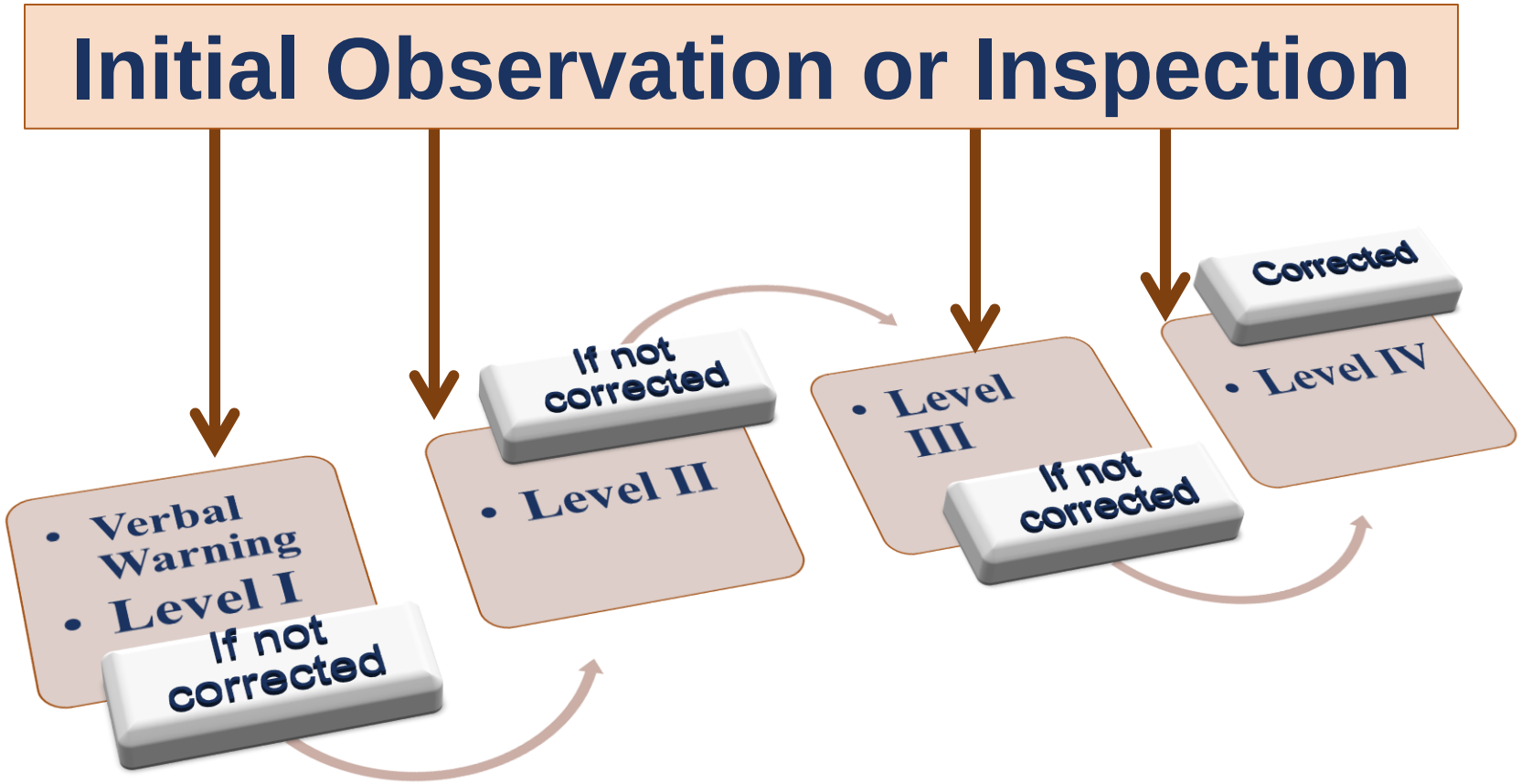
Escalating Enforcement Process



What is Timely Correction?

- Actual discharges must be stopped immediately
- For other issues, implement corrective actions before the next rain event but no later than 10 days after discovery
- Document and provide a rationale for corrective action that takes longer than 10 days

C.6.c – Best Management Practices Categories

- All sites must implement BMPs in the following categories
  1. Erosion Control
  2. Sediment Control
  3. Run-on and Runoff Control
  4. Active Treatment Systems (as needed)
  5. Good Site Management
  6. Non-Stormwater Management

C.6.d – Plan Approval Process

- Before issuing a grading permit, review erosion control plan to ensure that it:
  - Conforms to the local grading ordinance and other local requirements
  - Contains seasonally appropriate and effective BMPs
- Confirm sites one acre or more have filed for coverage under the State Construction General Permit (CGP)
  - Site as a has a WDID #
- Provide education materials, as appropriate

C.6.e – Inspections

- Send annual wet season notification by September 1
- Conduct monthly inspections October – April
  - ≥ 1 acre sites, hillside projects, and high priority sites
- Review adequacy of BMPs and consistency with local ordinances
- Require timely corrections of actual or potential problems observed

Monthly Rainy Season Inspections Required

≥1 acre sites

- Sites that disturb 1 acre or more of land (CGP sites)

Hillside projects

- **Sites disturbing ≥5,000 sf of land that:**
  - **Meet local hillside development criteria Or**
  - **Are in local hillside development zones**
  - **Or**
  - **Where there are no local criteria, sites with ≥15% slope**

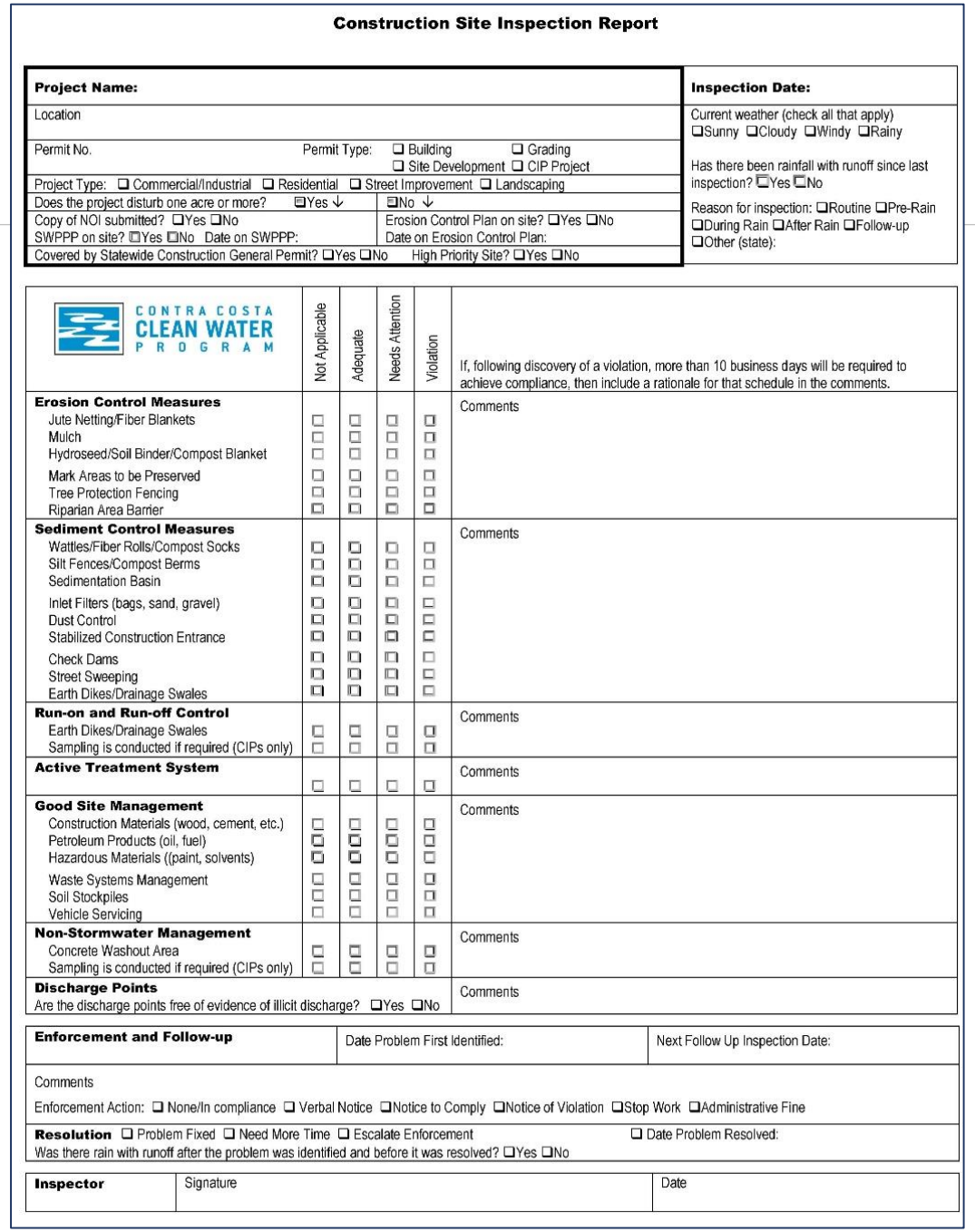
High priority sites

- Determined by the Regional Board or local jurisdiction
  - Erosion potential
  - Soil type
  - Slope
  - Size/type
  - Sensitivity/proximity of receiving water
  - NSWDs
  - Other factors

Rainy season is October - April

C.6.e – Tracking

- Use written or electronic inspection form
  - Program developed a standard inspection form
- Track/log data
  - Inspection log must be made available to Regional Water Board during inspections or audits
- Follow ERP if violations are identified



Construction Site Inspection Report

Project Name:	**Inspection Date:**
Location	Current weather (check all that apply) ❑Sunny ❑Cloudy ❑Windy ❑Rainy
Permit No. Permit Type: ❑ Building ❑ Grading ❑ Site Development ❑ CIP Project	Has there been rainfall with runoff since last inspection? ❑Yes ❑No
Project Type: ❑ Commercial/Industrial ❑ Residential ❑ Street Improvement ❑ Landscaping	Reason for inspection: ❑Routine ❑Pre-Rain ❑During Rain ❑After Rain ❑Follow-up ❑Other (state):
Does the project disturb one acre or more? ❑Yes ↓ ❑No ↓	
Copy of NOI submitted? ❑Yes ❑No SWPPP on site? ❑Yes ❑No Date on SWPPP:	Erosion Control Plan on site? ❑Yes ❑No Date on Erosion Control Plan:
Covered by Statewide Construction General Permit? ❑Yes ❑No	High Priority Site? ❑Yes ❑No

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	Not Applicable	Adequate	Needs Attention	Violation	If, following discovery of a violation, more than 10 business days will be required to achieve compliance, then include a rationale for that schedule in the comments.
Erosion Control Measures					Comments
Jute Netting/Fiber Blankets	☐	☐	☐	☐	
Mulch	☐	☐	☐	☐	
Hydroseed/Soil Binder/Compost Blanket	☐	☐	☐	☐	
Mark Areas to be Preserved	☐	☐	☐	☐	
Tree Protection Fencing	☐	☐	☐	☐	
Riparian Area Barrier	☐	☐	☐	☐	
Sediment Control Measures					Comments
Wattles/Fiber Rolls/Compost Socks	☐	☐	☐	☐	
Silt Fences/Compost Berms	☐	☐	☐	☐	
Sedimentation Basin	☐	☐	☐	☐	
Inlet Filters (bags, sand, gravel)	☐	☐	☐	☐	
Dust Control	☐	☐	☐	☐	
Stabilized Construction Entrance	☐	☐	☐	☐	
Check Dams	☐	☐	☐	☐	
Street Sweeping	☐	☐	☐	☐	
Earth Dikes/Drainage Swales	☐	☐	☐	☐	
Run-on and Run-off Control					Comments
Earth Dikes/Drainage Swales	☐	☐	☐	☐	
Sampling is conducted if required (CIPs only)	☐	☐	☐	☐	
Active Treatment System	☐	☐	☐	☐	Comments
Good Site Management					Comments
Construction Materials (wood, cement, etc.)	☐	☐	☐	☐	
Petroleum Products (oil, fuel)	☐	☐	☐	☐	
Hazardous Materials ((paint, solvents)	☐	☐	☐	☐	
Waste Systems Management	☐	☐	☐	☐	
Soil Stockpiles	☐	☐	☐	☐	
Vehicle Servicing	☐	☐	☐	☐	
Non-Stormwater Management					Comments
Concrete Washout Area	☐	☐	☐	☐	
Sampling is conducted if required (CIPs only)	☐	☐	☐	☐	
Discharge Points Are the discharge points free of evidence of illicit discharge? ❑Yes ❑No					Comments

Enforcement and Follow-up	Date Problem First Identified:	Next Follow Up Inspection Date:
Comments		
Enforcement Action: ❑ None/In compliance ❑ Verbal Notice ❑Notice to Comply ❑Notice of Violation ❑Stop Work ❑Administrative Fine		
Resolution ❑ Problem Fixed ❑ Need More Time ❑ Escalate Enforcement ❑ Date Problem Resolved: Was there rain with runoff after the problem was identified and before it was resolved? ❑Yes ❑No		

Inspector	Signature	Date

C.6.e – Reporting

Information to be reported
a. Number of active hillside sites <1 acre
b. Number of sites ≥1 acre
c. Number of active high priority sites <1 acre
d. Number of inspections conducted (all inspections**)
e. Number and type of enforcement actions
f. Number of illicit discharges (actual and inferred)
g. Number of enforcement actions or discrete number of potential and actual discharges fully corrected

Annual Report Template: # of Inspections

C.6.e.iii.(3)(a), (b), (c), (d) ►Site/Inspection Totals			
Number of active Hillside Sites (sites disturbing < 1 acre of soil requiring storm water runoff quality inspection) (C.6.e.iii.3.a)	**Number of High Priority Sites (sites disturbing < 1 acre of soil requiring storm water runoff quality inspection)** (C.6.e.iii. 3.c)	**Number of sites disturbing ≥ 1 acre of soil** (C.6.e.iii.3.b)	**Total number of storm water runoff quality inspections conducted (include only Hillside Sites, High Priority Sites and sites disturbing 1 acre or more)** (C.6.e.iii. 3.d)
#	#	#	#
Guidance: This is the total number of SITES considered Hillside Projects based on criteria submitted in FY 2015-2016 Annual Report, which triggers a requirement for monthly inspection during the rainy season.	**Guidance: This is the total number of SITES considered high priority, which triggers a requirement for monthly inspection during the rainy season. Please see MRP for discussion of what sites are considered high priority sites. Sites disturbing less than one acre of soil that are not considered high priority by the Permittee should not be reported here.**	**Guidance: This is the total number of SITES that disturb one or more acres of soil and are inspected monthly during the rainy season.**	**Guidance: This is the total number of INSPECTIONS conducted at hillside sites, high priority sites and at sites disturbing one or more acres of soil. Do not list inspections that are conducted at sites that are not within these two categories.**
Comments: **Guidance: Do not leave any cells blank.** **Provide explanatory details about the data reported above if necessary.**			
Provide the number of inspections that are conducted at sites not within the above categories as part of your agency's inspection program and a general description of those sites, if available or applicable. **Guidance: Do not leave this cell blank. Write the number of inspections and general description of sites inspected, or write "Information not available" or "Does not Apply".**			

Annual Report Template: Enforcement Actions

C.6.e.iii.(3)(e) ►Construction Related Storm Water Enforcement Actions

Guidance: Do not leave any cells blank. Provide a brief description of each enforcement action level (e.g., verbal warning, notice of violation, stop work order, legal action, etc.)

	Enforcement Action (as listed in ERP)[1]	**Number Enforcement Actions Issued**
Level 1[2]		
Level 2		
Level 3		
Level 4		
Total		

C.6.e.iii.(3)(f), ►Illicit Discharges

Guidance: Do not leave any cells blank.

	Number
Number of illicit discharges, actual and those inferred through evidence at hillside sites, high priority sites and sites that disturb 1 acre or more of land (C.6.e.iii. 3.f)	

Annual Report Template: Enforcement Actions

C.6.e.iii.(3)(g) ► Corrective Actions	
Indicate your reporting methodology below.	
☐ Permittee reports multiple discrete potential and actual discharges at a site as one enforcement action.	
☐ Permittee reports the total number of discrete potential and actual discharges on each site.	
	Number
Enforcement actions or discrete potential and actual discharges fully corrected within 10 business days after violations are discovered or otherwise considered corrected in a timely period (C.6.e.iii. .3.g)	
Comments: **Guidance: Do not leave any cells blank. Provide an explanation for each enforcement actions or discrete potential and actual discharges not resolved within 10 days or otherwise deemed resolved in a longer but still timely manner. Potential and actual discharges are the problems tracked using illicit discharge and the six BMP categories according to C.6.e.ii.(4)(e).**	

Annual Report Template: Trends & Effectiveness

C.6.e.iii.(4) ►Evaluation of Inspection Data
Describe your evaluation of the tracking data and data summaries and provide information on the evaluation results (e.g., data trends, typical BMP performance issues, comparisons to previous years, etc.).
Description:

C.6.e.iii.(4) ►Evaluation of Inspection Program Effectiveness
Describe what appear to be your program's strengths and weaknesses, and identify needed improvements, including education and outreach.
Description: **Guidance: Evaluate your construction inspection program and summarize efforts conducted by your municipality in FY 18-19 to implement MRP requirements, such as: 1) revised stormwater construction inspection forms and inspection data tracking tools; 2) revised operating procedures and provided training to inspectors; 3) conducted inspections with the new forms; 4) participated in the countywide program's committees/work groups; and 5) participated in the BASMAA Development Committee (if applicable). Refer to the C.6 Construction Site Control section of countywide program's FY 18-19 Annual Report (if applicable) for a description of activities at the countywide or regional level.**

Annual Report Template: Staff Training

C.6.f.iii ►Staff Training Summary

Training Name	Training Dates	Topics Covered	No. of Inspectors in Attendance

C.6.f – Staff Training

- Provide training or access to training for staff involved in construction site stormwater inspections
- Training to be provided at least every other year

Today's workshop meets the C.6.f training requirement

Summary of MRP Provision C.6

- Review erosion control plans
- Inspect sites to confirm effective BMP implementation
- Perform follow-up and enforcement consistent with your agency's ERP to correct problems
  - Escalate enforcement as appropriate
- Report data that summarizes your effort and demonstrates the effectiveness of your construction program
- Train staff responsible for these tasks

Questions

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STORMWATER PROTECTION PRINCIPLES AND BMPS FOR CONSTRUCTION SITES

Layers Of Controls Protect Local Creeks and Bays

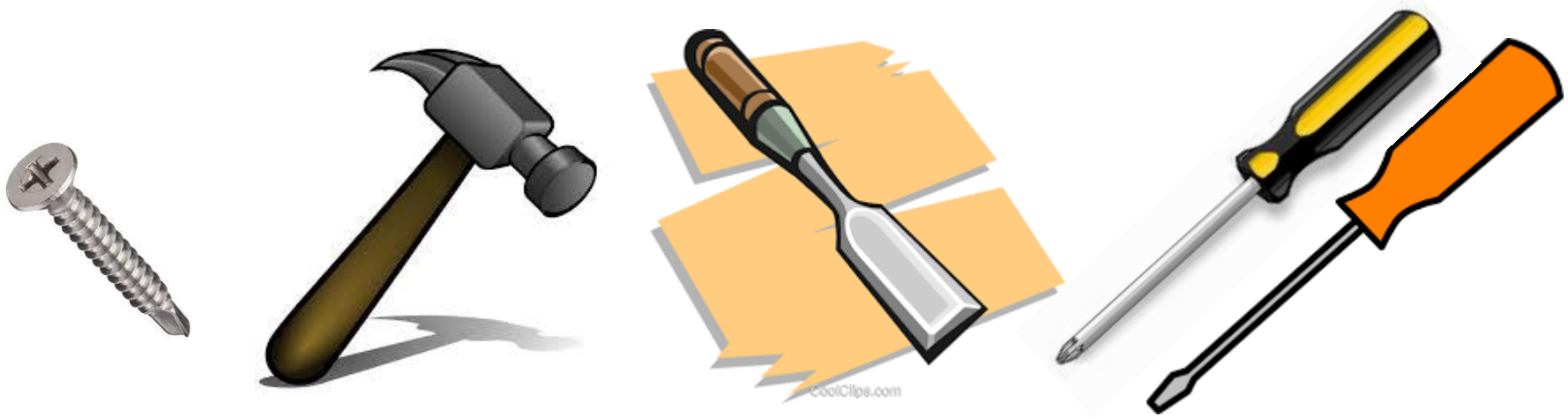
Urban runoff ordinance	• Protects water quality • Non-stormwater discharge provisions
Outreach to all projects	• BMPs to minimize erosion and pollutant discharges
C.6 projects	• Erosion Control Plans to protect water quality
CGP projects	• State NPDES permit to protect water quality

Basic Principles of Stormwater Quality Protection

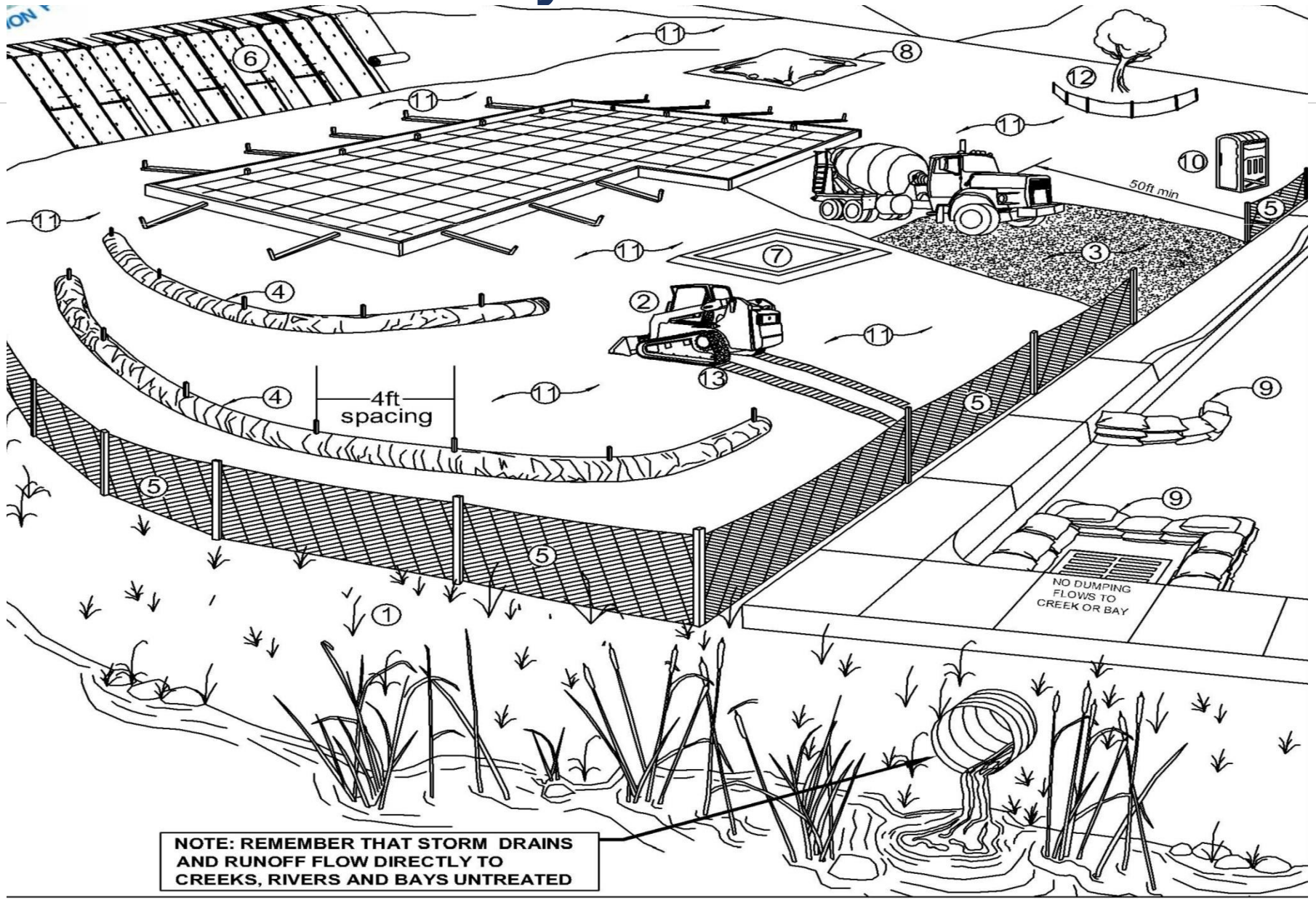
- **Plan** for stormwater protection
- **Use and maintain BMPs** at appropriate levels year-round
  - **Minimize** pollutant exposure
    - Don’t expose potential pollutants to wind and rain
  - **Protect** exposed pollutants
    - Keep pollutants from being washed or blown away
- **Use BMPs in layers** to protect water quality and plan for accidents

Planning for Stormwater Protection

- BMPs are the tools that are used for stormwater protection
- BMPs must be deployed in the right place and at the right time
- Construction sites are dynamic so BMPs will need to be updated as schedules and conditions change



Use BMPs in Layers



Graphic courtesy of Marin County Stormwater Pollution Prevention Program

Common Sources of Water Pollutants on Construction Sites

Material/Activity	Pollutant	Effect on Creeks
Grading/soil disturbance	Sediment	Fills spawning gravels, clogs gills, impairs ability to hunt
Concrete wastewater	pH	Toxic to aquatic life
Concrete wastewater Vehicle fueling & maintenance	Metals	Toxic to aquatic life
Paints and solvents	Synthetic organic compounds	Toxic to aquatic life
Landscape trimmings and fertilizers	Nutrients	Causes algal blooms, depletes oxygen
Landscape trimmings	Biochemical oxygen demand	Depletes oxygen
Asphalt/Paving Vehicle fueling & maintenance	Oil & grease	Causes sheen, toxic to aquatic life

General Tips for Inspectors

- Does field implementation match the Erosion Control Plan
  - Schedule?
  - Activities?
  - BMPs?
- Understand how the BMP works and proper installation
- Use the BMP resources for inspection guidance
  - Suitable Applications – where is the BMP appropriate
  - Limitations – where to use caution with the BMP
  - Implementation – how to install the BMP
  - Inspection and maintenance – what to look for after installation

C.6 Minimum BMP Categories Toolbox

BMP	Typical Applications
1. Erosion Control	Apply on graded areas and soil stockpiles.
2. Sediment Control	Apply around graded areas, soil stockpiles, landscape materials, site perimeter, at inlets/ catch basins. Includes sweeping and tracking
3. Run-on and Runoff Control	Diverts water away from disturbed areas and controls water leaving site.
4. Active Treatment Systems	Not common, chemical treatment systems to remove sediment.
5. Good Site Management	Good housekeeping and site management throughout site, especially material laydown areas.
6. Non-stormwater Management	Water conservation and practices to prevent non-stormwater discharges.

Erosion control prevents soil from becoming sediment!

- Covers soil to protect it from being washed or blown away
  - Vegetation
  - Blankets
  - Mulch

<u>Tip for Inspectors</u>
Look for bare soil
Ask how the soil will be covered

Reducing Erosion

- Soil Loss or Erosion is a function of three factors
  - Rainfall intensity (R)
  - Soil type (K)
  - Length of Slope (LS)
- Erosion is mitigated by
  - Cover type (C)
  - Erosion control practice (P)
- Only LS, C, and P can be manipulated on the project site
- R is affected by project time and duration

Soil Loss = R*K*LS*C*P

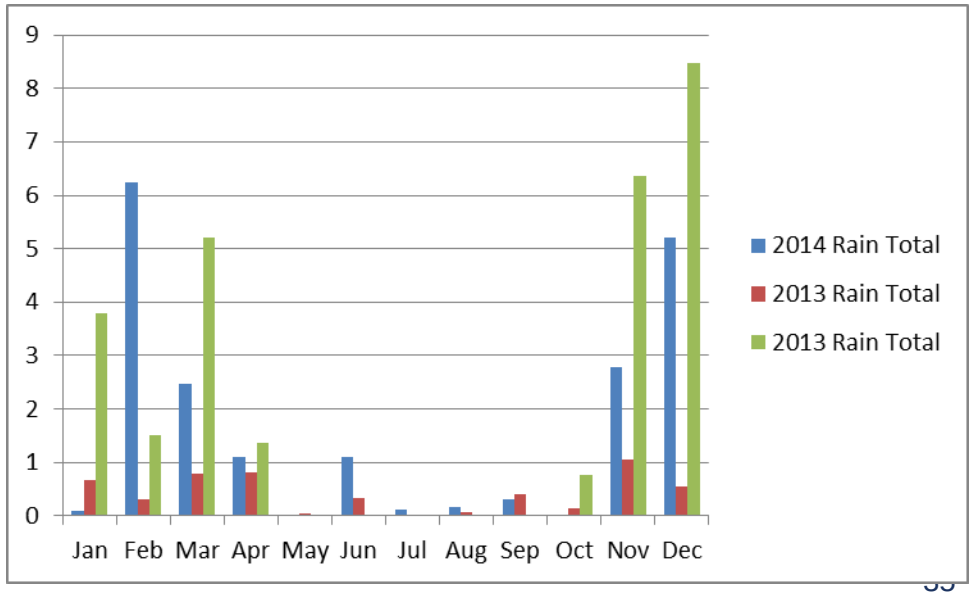
Scheduling

- A sequence of construction activities and BMPs that considers local weather patterns
- Goal - reduce the area and duration of soil exposure
- Avoid work in the rainy season when feasible
- Track weather and modify activities accordingly

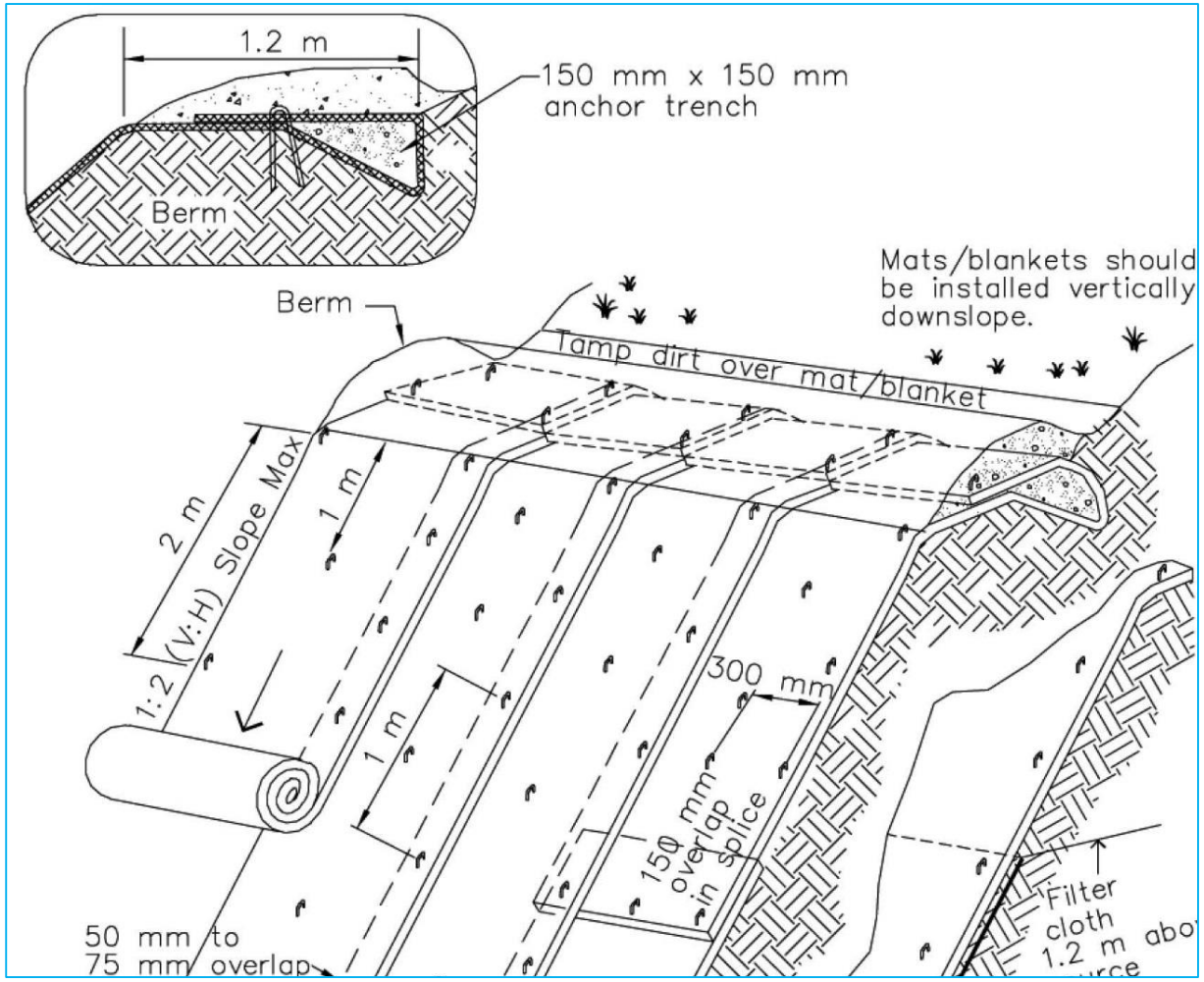
<u>Tips for Inspectors</u>

Awareness of weather forecast

Stockpiled BMPs for rapid deployment



Fiber (Erosion Control) Blankets



Tips for Inspectors

- Blanket overlap – no gaps
- Stapled to soil
- Not stretched
- Anchored at top
- Install vertically downslope
- Natural fiber nets for permanent installations

Track Walked Slope Treated with Hydromulch

Hydroseeding/Hydromulch

Tips for Inspectors

- Look for complete coverage of soil – no or few bare spots
- Look for erosion rills
- Seeds need irrigation or light rains to germinate
- Best if soil is track walked before application

Application too thin!

Better Coverage

Preserve Vegetation

Tips for Inspectors

- Look for clear delineation with fencing
- Preserved existing vegetation in the buffer
- Must be installed before construction starts

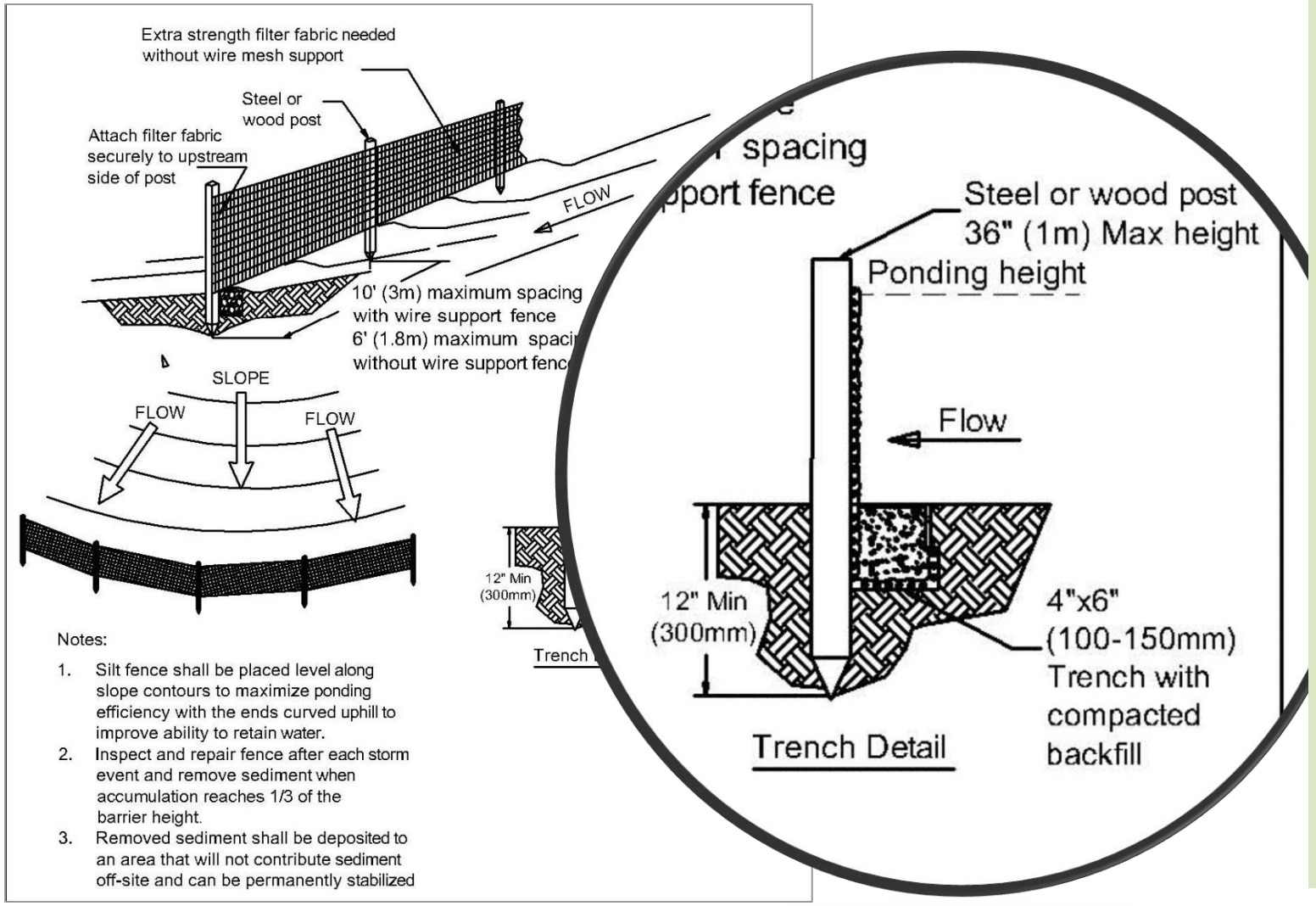
Sediment Control

- Trap sediment and keep on site and out of storm drains
  - Silt fences
  - Wattles
  - Construction entrances
  - Sweeping

Tip for Inspectors

- Look for sediment controls where runoff will leave the site

Silt Fence



Tips for Inspectors

- Installed on contour!
- Ponds water – is there space?
- Tug test – trenched and compacted
- Sediment no more than 1/3 height
- No gaps between sections
- Look for undercutting (or light under fence)
- Cannot use in concentrated flow paths

Fiber Rolls (Wattles) Type 1 Installation

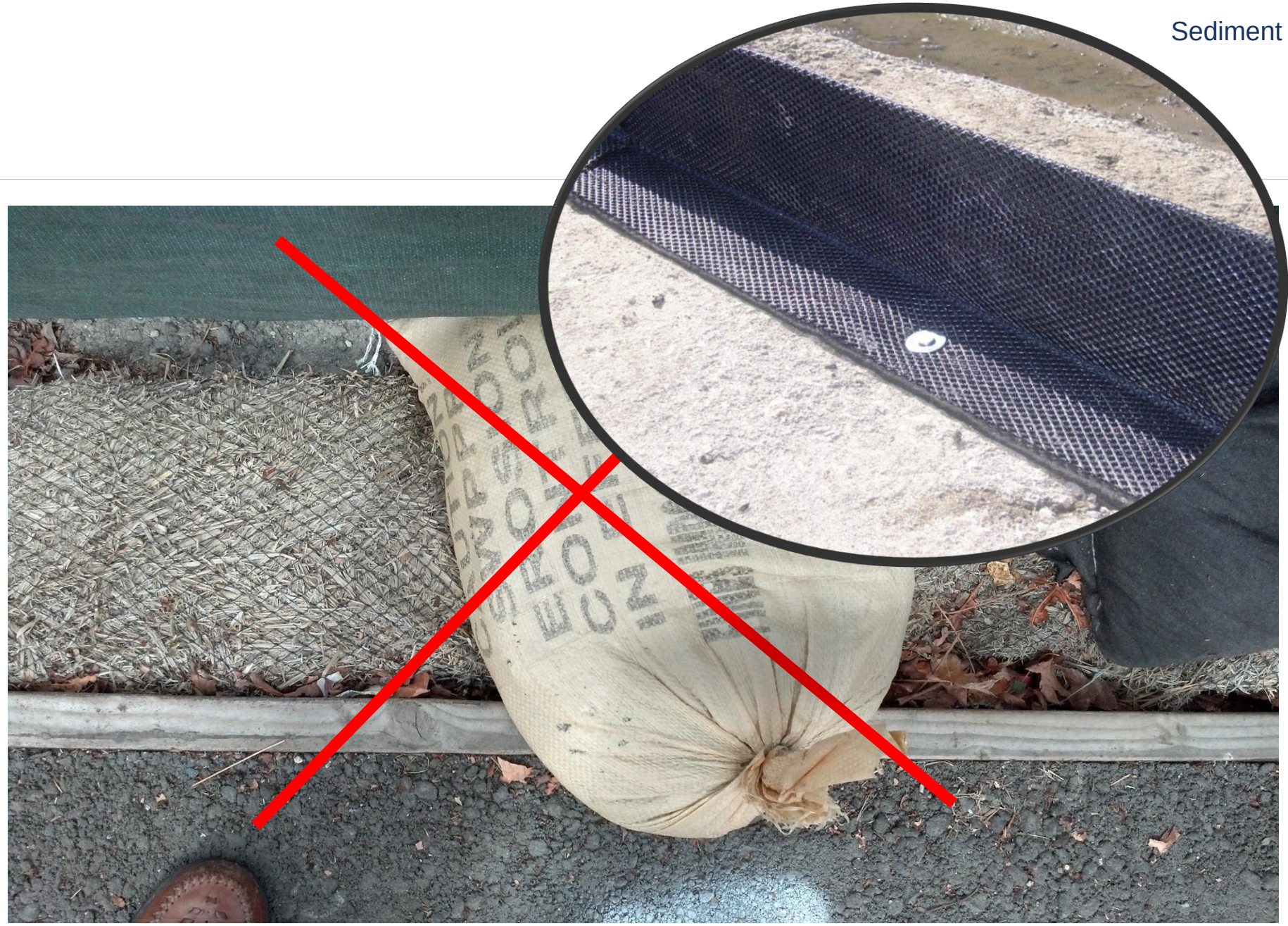
Tips for Inspectors

- Installed on contour!
- Cannot be used on pavement
- Stakes ~ every 4-ft
- Trenched 1/4-1/3 the height of the wattle
- Toe test – can you lift the wattle with you toe?
- Sediment build up no more than 1/3 height
- Overlap sections
- Look for undercutting
- J-hook ends up slope

Fiber Rolls (Wattles) Type 2 Installation

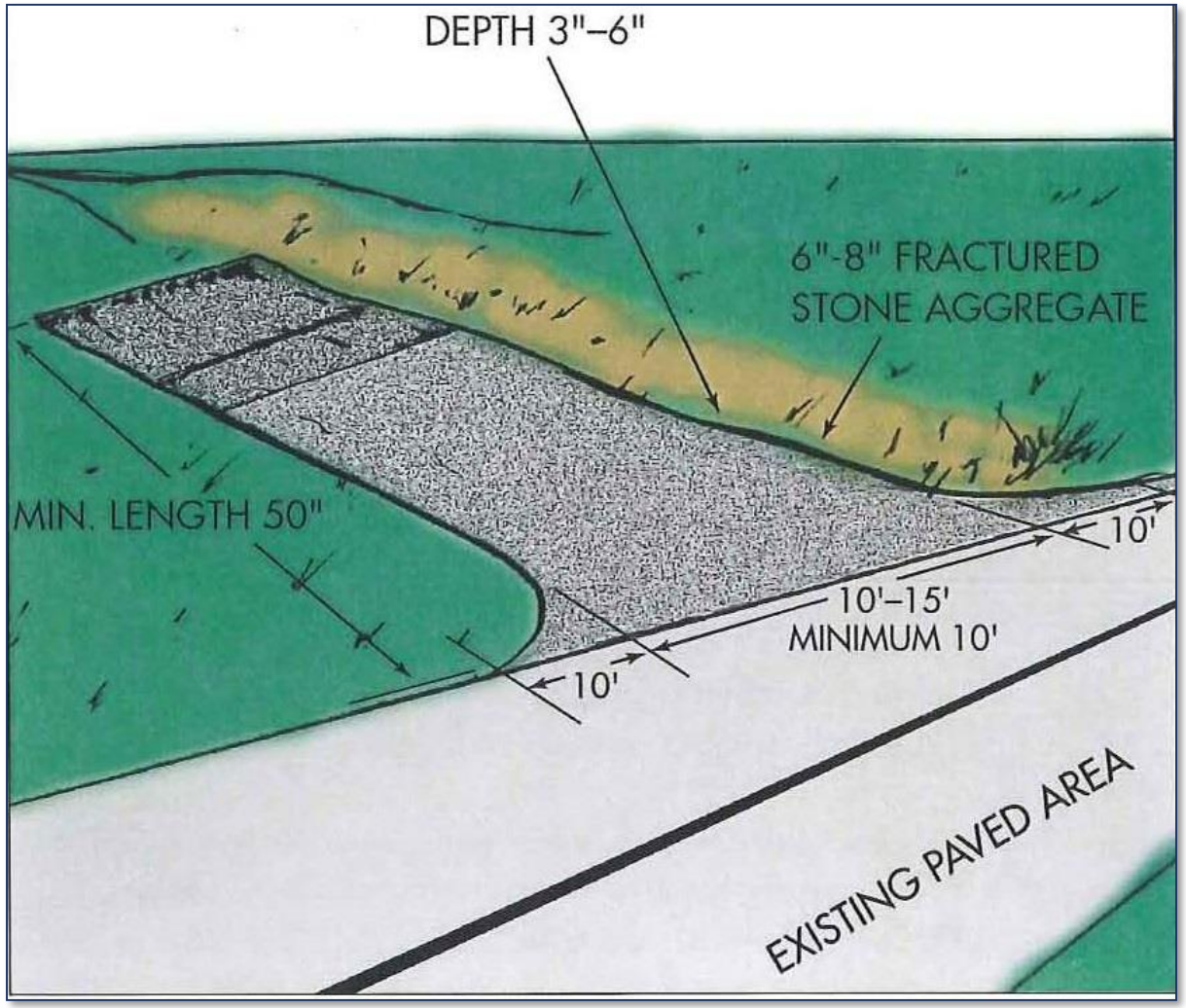
Tips for Inspectors

- Installed on contour!
- Cannot be used on pavement
- Can be installed over erosion control blankets
- Toe test – can you lift the wattle with you toe?
- Rope holds wattle to soil, trench is optional
- Sediment build up no more than 1/3 height
- Overlap sections
- Look for undercutting

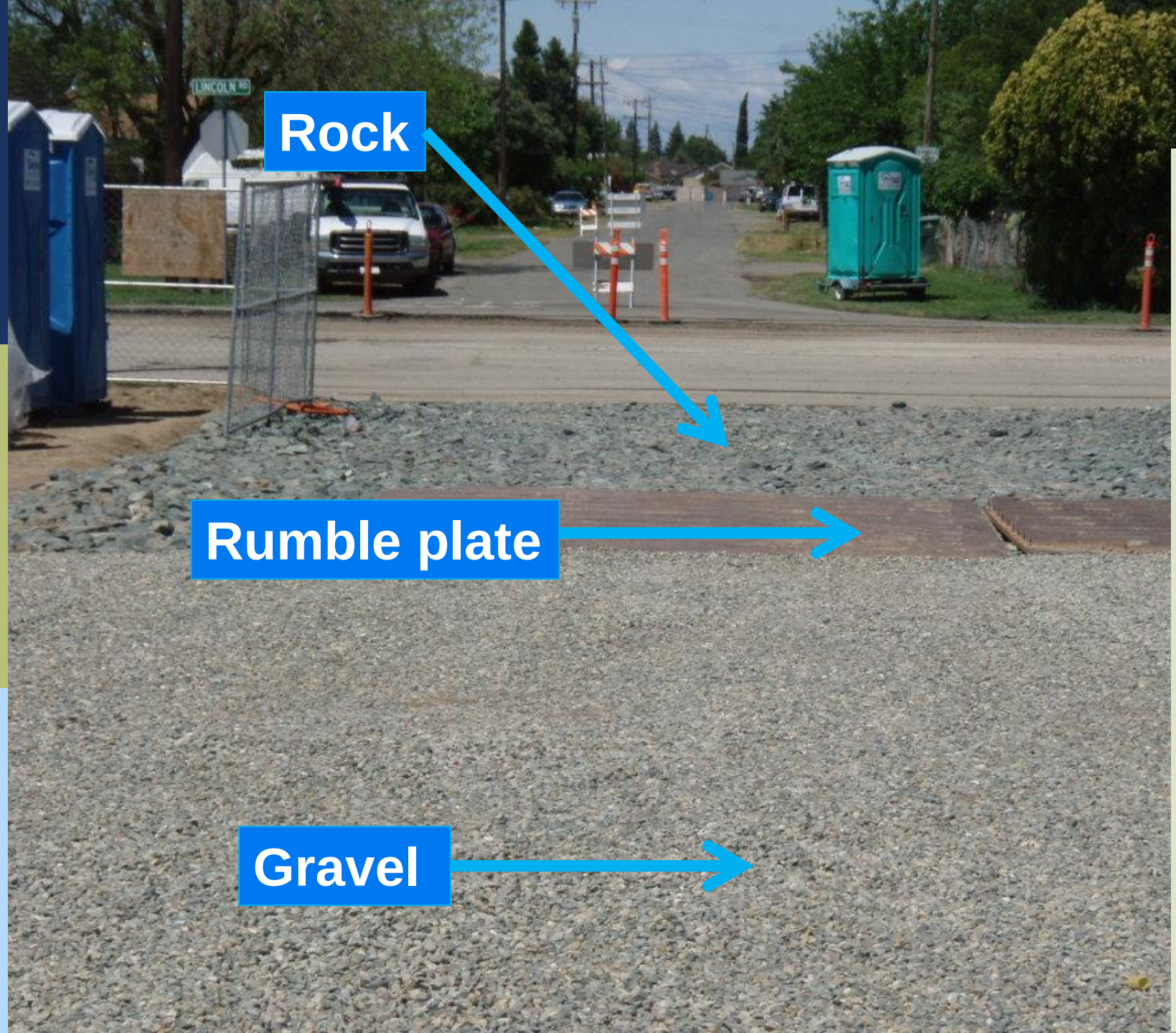


Stabilized Entrance/Exit Standard Design

- Rock pad underlain with a geotextile fabric
  - 10 feet wide – accommodate width of vehicles
  - 50 feet long – accommodate several wheel rotations
  - 3-inch to 8-inch rock (sources vary on rock size)
  - 6 to 12 inches deep layer of rocks



Rumble plate
Rock



Small Site Tips for Inspectors

- Install maximum length site will allow
- Install to allow two full rotations of tires of the typical vehicle
- Augment with rumble racks
- Enhance street sweeping

Drain Inlet Protection
Last Line of Defense

Tips for Inspectors

- Cannot be the only sediment control BMP!
- Look for protection at drains on-site and immediately off-site
- Woven geotextile bags (in good condition)
- Bags filled with gravel
- Not stacked higher than curb line
- Spillway for water to get to DI
- Cannot use silt fence fabric over inlet
- Remove sediment accumulation when 1/3 height of barrier

Storm Drain Inlet Protection

J-hook check dam along the flow path

Protection at the drain

Street Sweeping / Vacuuming Inspection Tips

Tips for Inspectors

- Look for evidence of daily street sweeping/vacuuming
  - Visual – is the roadway clean? Is the sweeper present?
  - Records – are there logs/invoices for sweeper services?

Active Treatment Systems

- System that uses chemical coagulation, chemical flocculation, or electro-coagulation to reduce turbidity
- Systems typically include basins or holding tanks, pumps, filtration units, and online monitoring systems

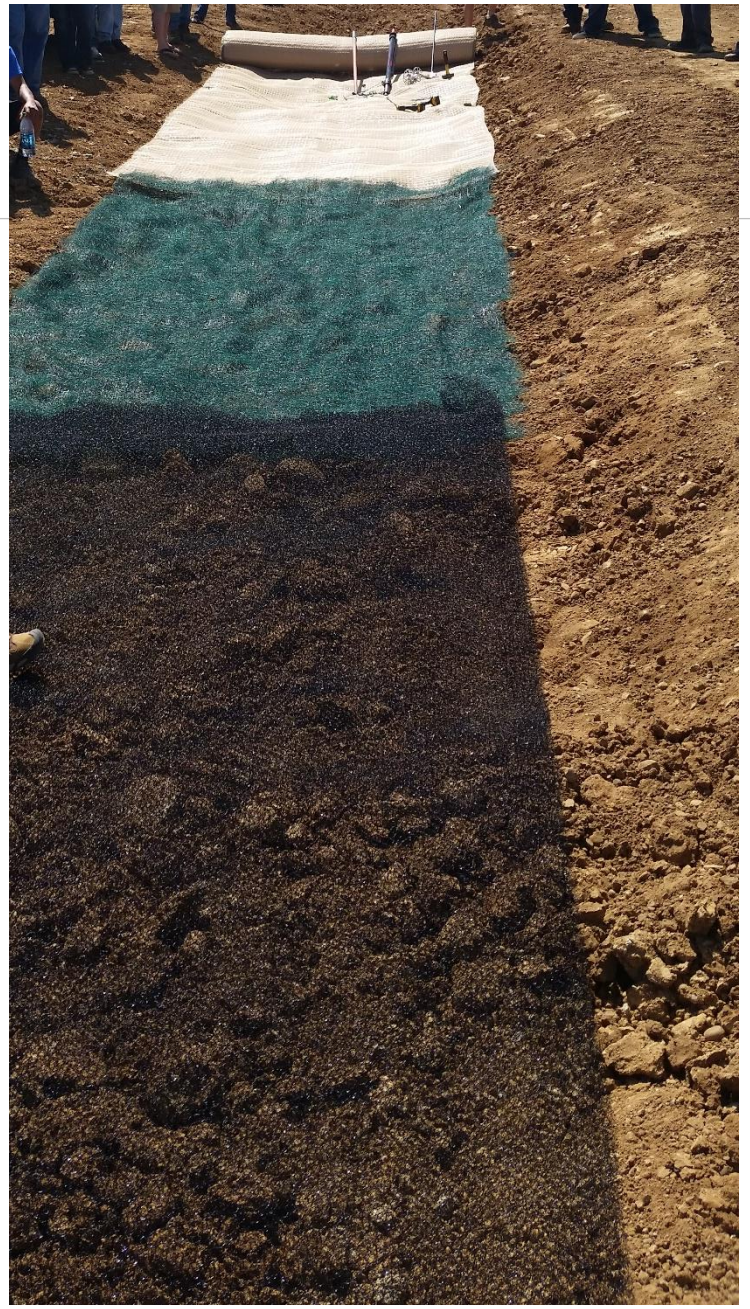
If ATS is used must meet the CGP ATS requirements (Attachment F of the CGP)

Tips for Inspectors

- Check how chemicals are stored
  - Secondary containment!
- Check the discharge point
  - Effluent should be clear
  - No signs of erosion

Run-on and Runoff Controls

- Run-on Control
  - Manage/divert runoff and dry weather flows that originate outside the project around the project or disturbed areas
- Runoff Control
  - Manage runoff within the project
    - Prevent runoff from flowing through disturbed areas
    - Direct runoff to sediment controls



Good Site Management

- Source control practices that minimize exposure of construction materials and waste to rain and wind

Tip for Inspectors

- Check material and waste storage areas
- Is the site prepared for spills and leaks

Stockpile Management

Tip for Inspectors

- Covers for inactive soil piles
- Covers tied down
- Perimeter controls for soil piles

Hazardous Materials and Petroleum Products

Sanitary Waste Management

- Manage sanitary wastes by providing convenient, appropriately placed, well-maintained facilities
- Arrange for regular service and disposal

Tips for Inspectors

- Placed on flat surface and secure units
- Out of gutter and away from storm drains
- Secondary containment

Equipment and Vehicle Servicing

Tips for Inspectors

- Only necessary maintenance at site
- Drip pans, absorbent pads, and tarps available or in use to contain drips
- Evidence of spills or excessive leaks

Waste and Litter Management

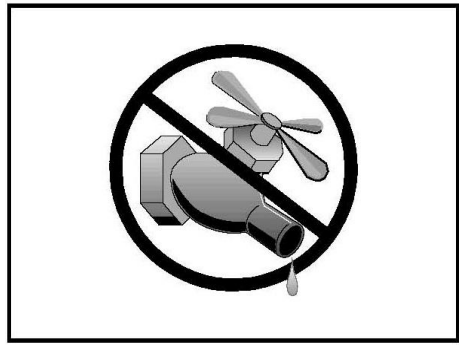
Tips for Inspectors

- Covers in place or available to be deployed
- Excessive litter on site
- Uncontained piles of trash
- Leaks from bins

Non-Stormwater Management

Tips for Inspectors

- Evidence of discharge, e.g., stains, wet areas
- Ask about hoses or unlabeled pipes
- Excessive runoff from irrigation or dust control



Concrete Washout

Tips for Inspectors

- Wash out set up before start of concrete operations
- Leaks or damaged containers
- Overtopping
- Away from storm drains

Copper is a Significant Water Quality Concern

- Copper is used in a variety of architectural features
  - When installed these features may be cleaned, treated (patinated), or washed
- Treatment solutions and rinse or wash water from copper features must be collected for proper disposal

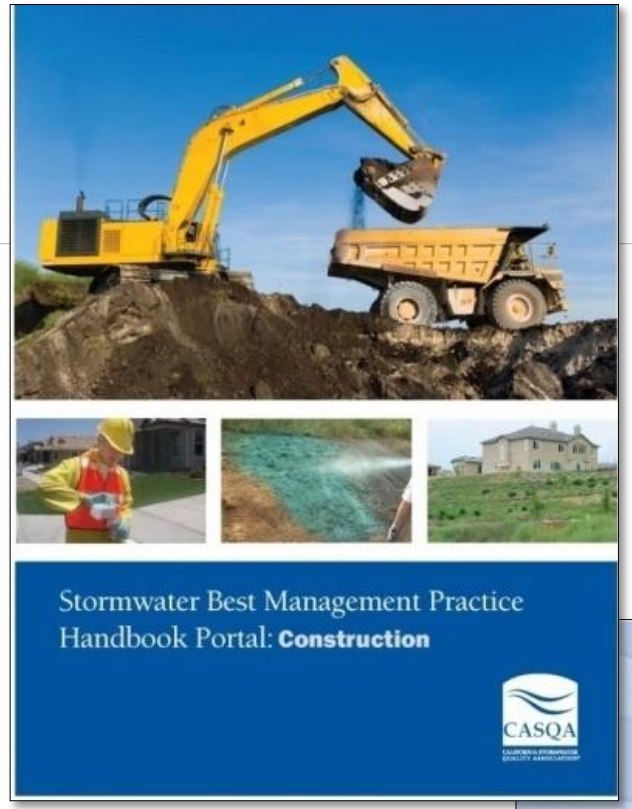
Source: Wiki commons, http://www.rutlandguttersupply.com/copper-dome.asp

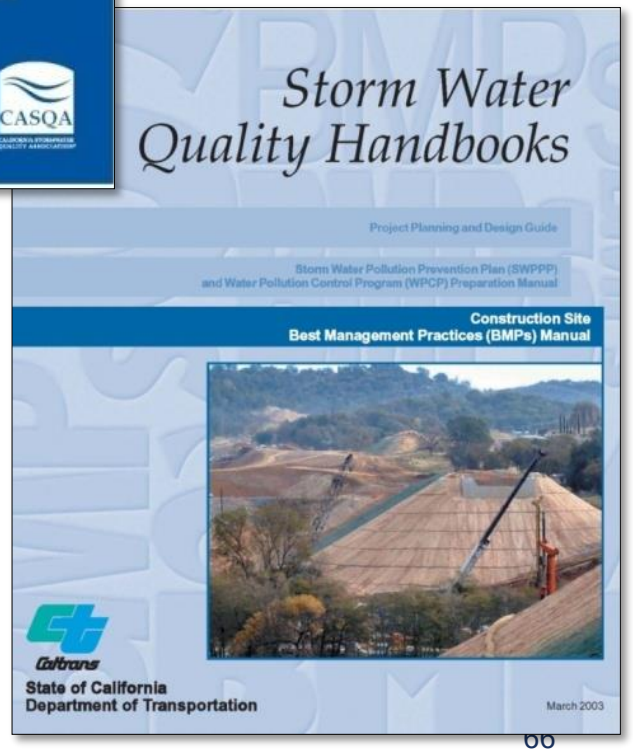
Tips for Inspectors

- Ask operators about plans treat or wash features

BMP References

- CASQA California BMP Handbook, Construction, 2012 and subsequent updates
  - Access via CCCWP subscription: http://www.casqa.org
- Caltrans Stormwater Quality Handbook, Construction Site BMP Manual, 2003
  - Available online at: http://www.dot.ca.gov/hq/construc/stormwater/manuals.htm





Recapping the C.6 BMPs

1. Erosion Control
2. Run-on and Runoff Control
3. Sediment Control
4. Active Treatment Systems (as necessary)
5. Good Site Management
6. Non-stormwater Management
    - Architectural Copper

Questions

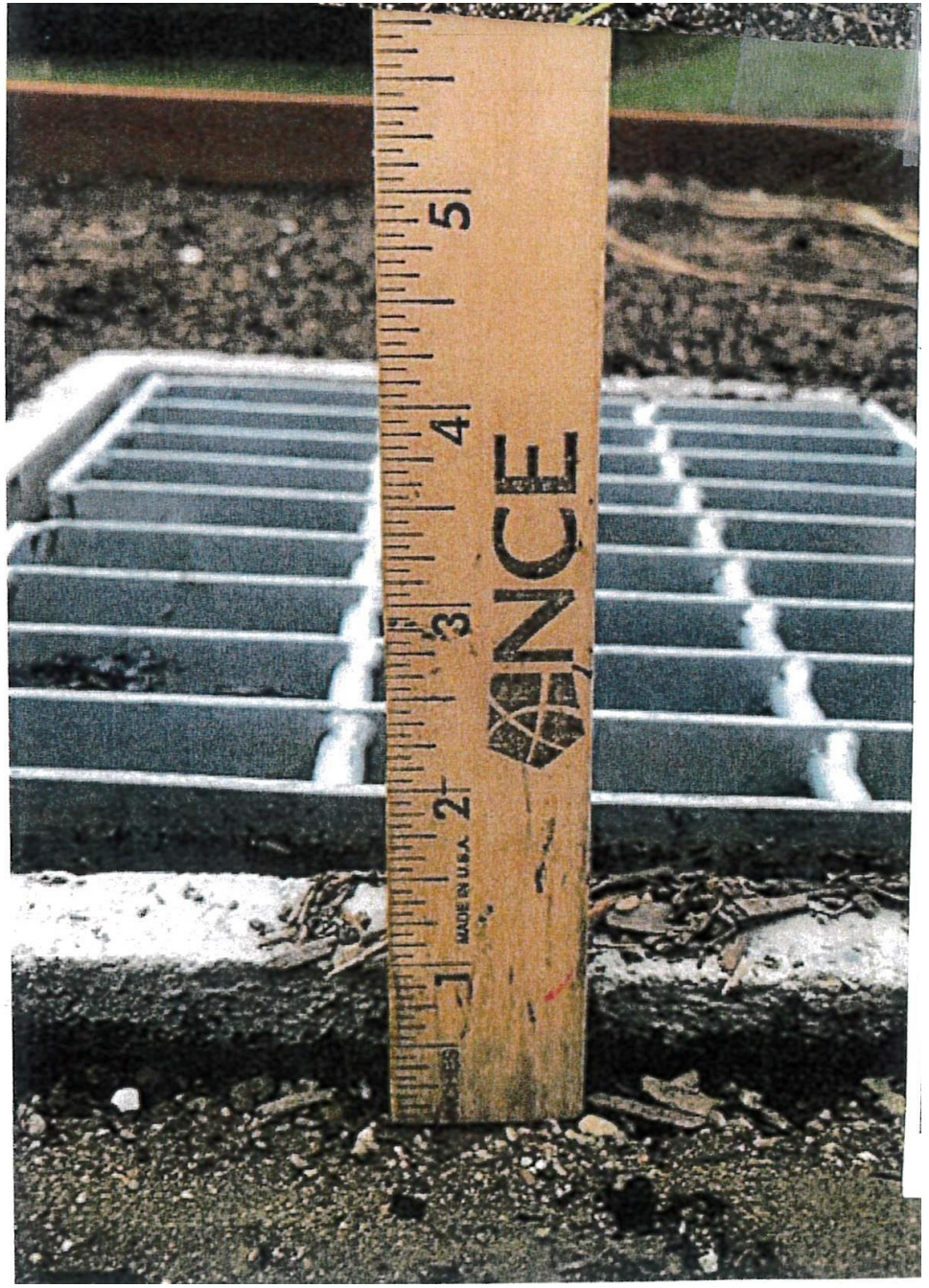
CONTRA COSTA CLEAN WATER PROGRAM

David Klapperich, Contra Costa County || Neil Mock, Walnut Creek

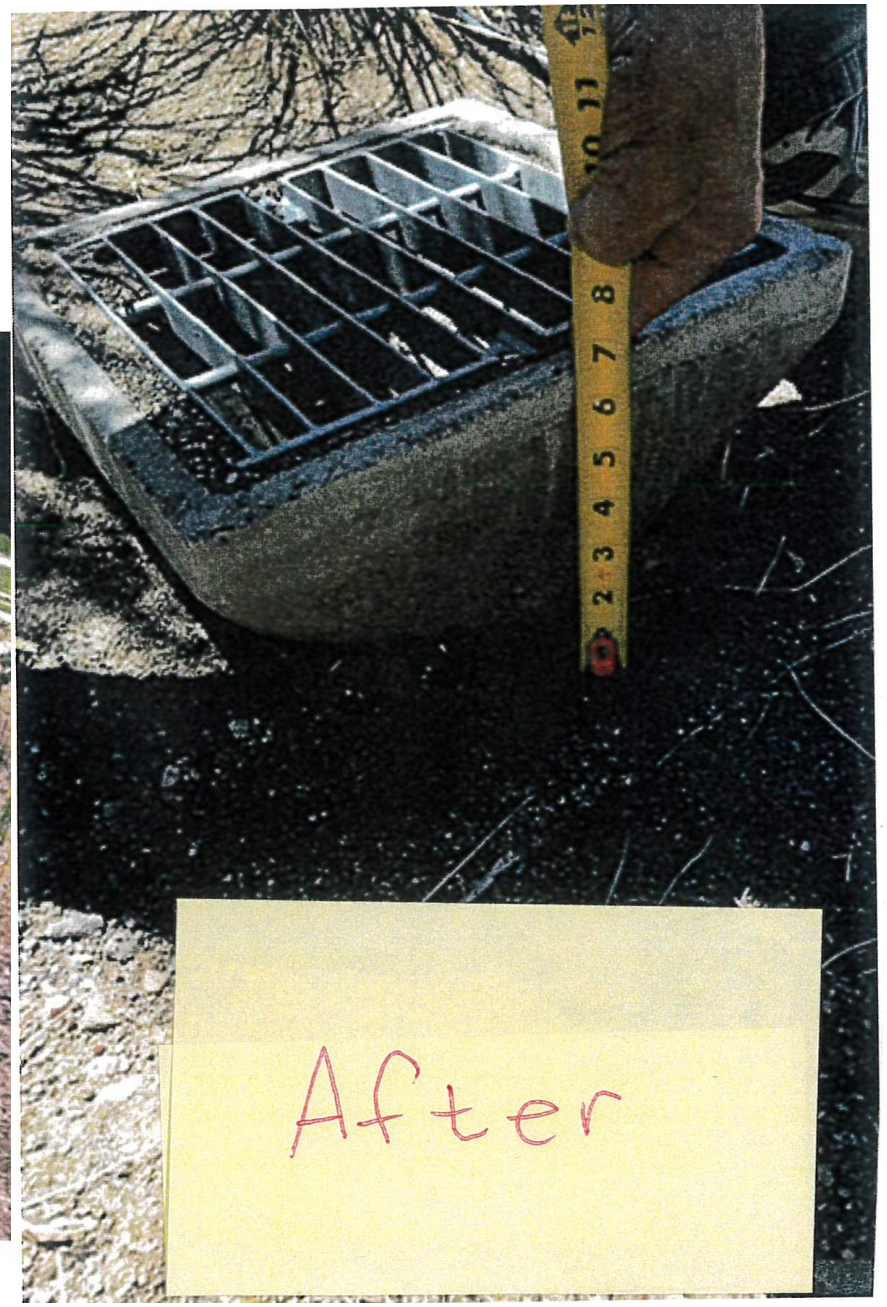
REAL INSPECTION STORIES

Inspecting Bioretention Facilities: Issue Observed

Inspecting Bioretention Facilities: Issue Observed



Inspecting Bioretention Facilities: Issue Remedied



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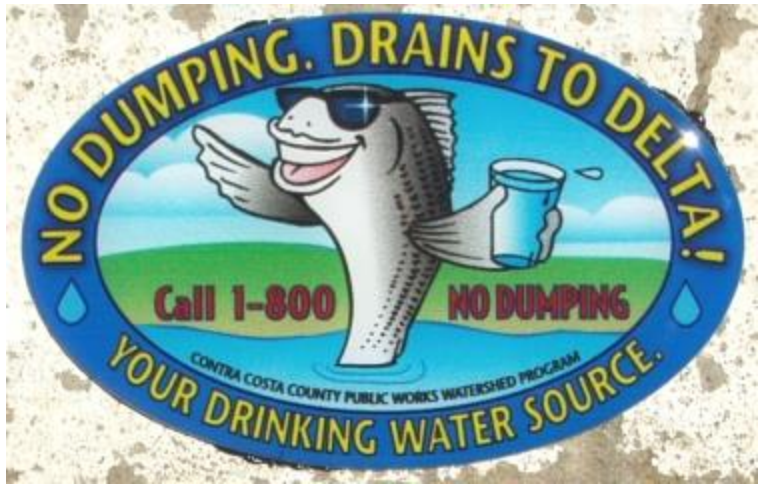
CONTRA COSTA
CLEAN WATER
PROGRAM

INSPECTIONS, DOCUMENTATION, BEST PRACTICES AND TOOLS

Guidelines for Inspections

- Frequency
- Goals
- Preparation
- Site Visit
  - What to look for
  - Using the inspection checklist
- Documenting the inspection



Frequency

- Monthly inspections during the wet season for
  - Sites ≥ 1 acre (CGP sites),
  - Hillside projects, and
  - High Priority sites

    Each agency defines their high priority sites
- Re-inspection for violations
- Many agencies inspect other sites based on local code or agency specific requirements

Wet season = October through April

Goals of Inspection

- Assess compliance with local ordinances
- Check adequacy and effectiveness of BMPs
- Require correction of problems
- Observe
  - Evidence of sediment discharges
  - Evidence of discharge of construction materials
  - Evidence of illicit connections/discharges
- Educate on stormwater pollution prevention

Preparation for Inspection

- Review existing information
  - Past Inspection Records
  - Site Plan/SWPPP Plan
  - Check with other inspectors
- Other useful information
  - SWPPP or Erosion Control Plan
  - Locate site with mapping tools (e.g., GIS, Google Maps) to understand location in watershed
  - Information in SMARTS on CGP sites
    - Annual Reports
    - Monitoring data (pH, turbidity)

Preparation for Inspection

- Gather equipment and tools
  - PPE – hard hat, safety glasses, safety shoes, vest
  - Identification
  - Copy of Site Map, plan, schedule
  - Inspection form blanks or field log
  - Camera
  - Enforcement documents
  - Brochures/info

At the Site Trailer

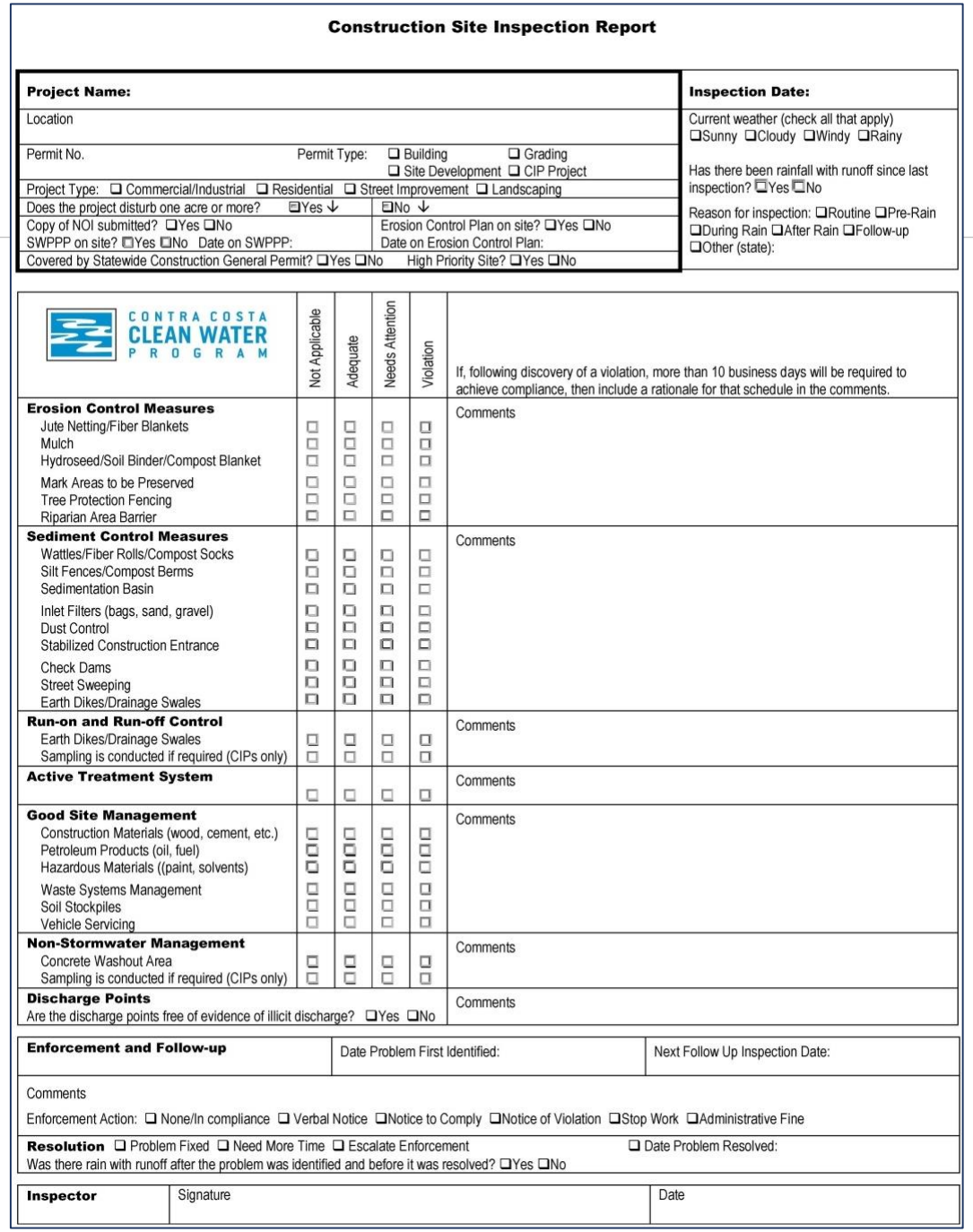
- Meet with Superintendent, Qualified SWPPP Practitioner (QSP) or their designee (if available)
- Outline requirements and expectations
- Review erosion control plan
  - Confirm where they are in the schedule, what BMPs are in place, and what is planned
  - Review their inspection logs, sampling results
- Ask Superintendent and QSP (designee) to accompany you on the inspection
- Check on safety concerns

Conducting the Inspection

- Have a plan for the site walk to cover all your areas of interest
- Point out good and poor practices as you go
  - note violations
  - areas that could be improved
  - good practices
- Photograph notable and poor practices
- Conclude inspection by reviewing findings with the Superintendent and QSP (designee)
  - Note violations, time to correct, and enforcement

Documenting the Inspection

- Complete the inspection form
- Mirrors the MRP requirements
  - Facilitates reporting
  - Provide consistency across agencies
- Accounts for CGP requirements
  - Used for CIPs



Construction Site Inspection Report

Project Name:	**Inspection Date:**
Location	Current weather (check all that apply) ❑Sunny ❑Cloudy ❑Windy ❑Rainy
Permit No. Permit Type: ❑ Building ❑ Grading ❑ Site Development ❑ CIP Project	Has there been rainfall with runoff since last inspection? ❑Yes ❑No
Project Type: ❑ Commercial/Industrial ❑ Residential ❑ Street Improvement ❑ Landscaping	Reason for inspection: ❑Routine ❑Pre-Rain ❑During Rain ❑After Rain ❑Follow-up ❑Other (state):
Does the project disturb one acre or more? ❑Yes ↓ ❑No ↓	
Copy of NOI submitted? ❑Yes ❑No / Erosion Control Plan on site? ❑Yes ❑No	
SWPPP on site? ❑Yes ❑No Date on SWPPP: / Date on Erosion Control Plan:	
Covered by Statewide Construction General Permit? ❑Yes ❑No High Priority Site? ❑Yes ❑No	

CONTRA COSTA CLEAN WATER PROGRAM

	Not Applicable	Adequate	Needs Attention	Violation	If, following discovery of a violation, more than 10 business days will be required to achieve compliance, then include a rationale for that schedule in the comments.
Erosion Control Measures					Comments
Jute Netting/Fiber Blankets	☐	☐	☐	☐	
Mulch	☐	☐	☐	☐	
Hydroseed/Soil Binder/Compost Blanket	☐	☐	☐	☐	
Mark Areas to be Preserved	☐	☐	☐	☐	
Tree Protection Fencing	☐	☐	☐	☐	
Riparian Area Barrier	☐	☐	☐	☐	
Sediment Control Measures					Comments
Wattles/Fiber Rolls/Compost Socks	☐	☐	☐	☐	
Silt Fences/Compost Berms	☐	☐	☐	☐	
Sedimentation Basin	☐	☐	☐	☐	
Inlet Filters (bags, sand, gravel)	☐	☐	☐	☐	
Dust Control	☐	☐	☐	☐	
Stabilized Construction Entrance	☐	☐	☐	☐	
Check Dams	☐	☐	☐	☐	
Street Sweeping	☐	☐	☐	☐	
Earth Dikes/Drainage Swales	☐	☐	☐	☐	
Run-on and Run-off Control					Comments
Earth Dikes/Drainage Swales	☐	☐	☐	☐	
Sampling is conducted if required (CIPs only)	☐	☐	☐	☐	
Active Treatment System	☐	☐	☐	☐	Comments
Good Site Management					Comments
Construction Materials (wood, cement, etc.)	☐	☐	☐	☐	
Petroleum Products (oil, fuel)	☐	☐	☐	☐	
Hazardous Materials ((paint, solvents)	☐	☐	☐	☐	
Waste Systems Management	☐	☐	☐	☐	
Soil Stockpiles	☐	☐	☐	☐	
Vehicle Servicing	☐	☐	☐	☐	
Non-Stormwater Management					Comments
Concrete Washout Area	☐	☐	☐	☐	
Sampling is conducted if required (CIPs only)	☐	☐	☐	☐	
Discharge Points Are the discharge points free of evidence of illicit discharge? ❑Yes ❑No					Comments

Enforcement and Follow-up	Date Problem First Identified:	Next Follow Up Inspection Date:

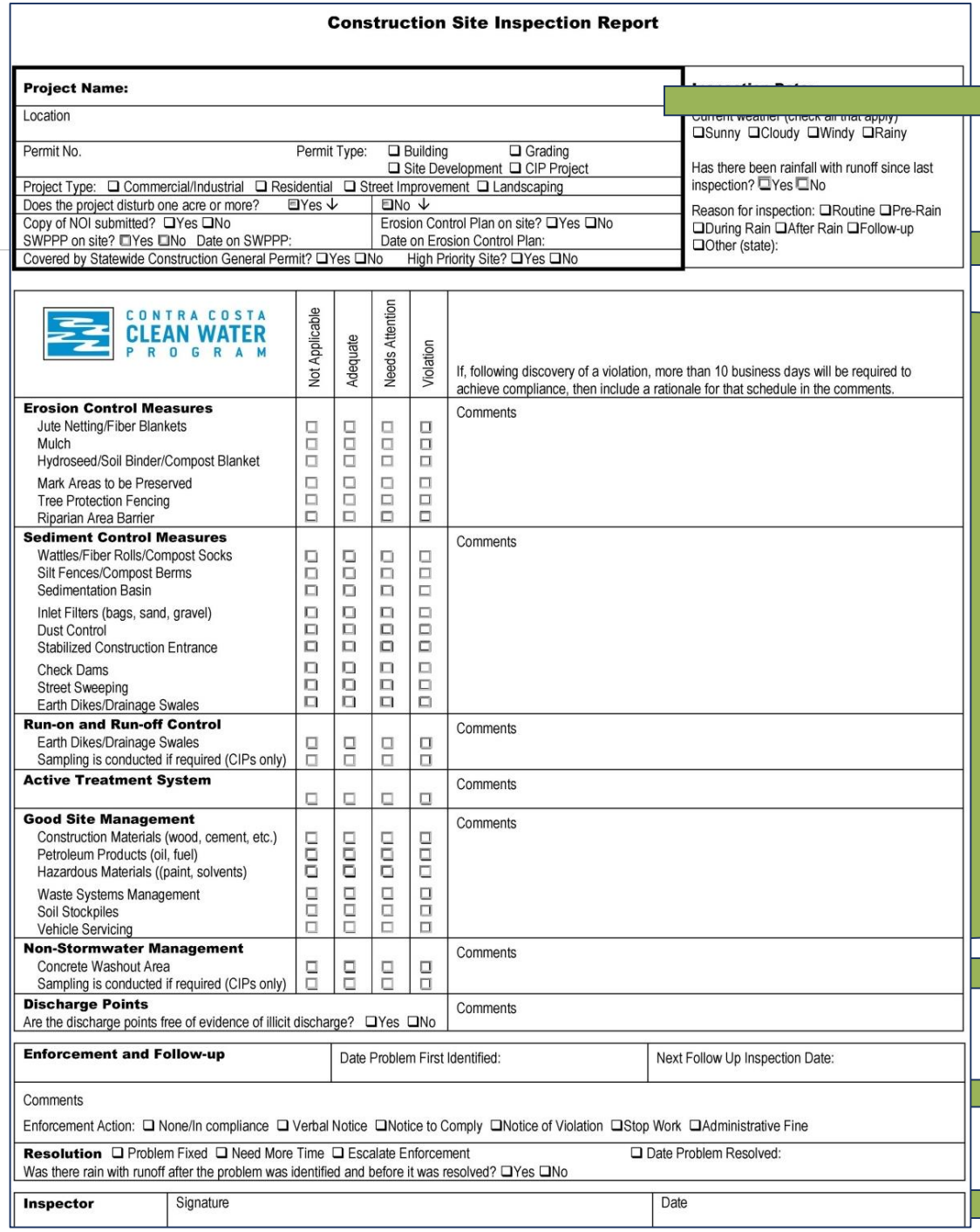
Comments

Enforcement Action: ❑ None/In compliance ❑ Verbal Notice ❑Notice to Comply ❑Notice of Violation ❑Stop Work ❑Administrative Fine

Resolution ❑ Problem Fixed ❑ Need More Time ❑ Escalate Enforcement ❑ Date Problem Resolved:

Was there rain with runoff after the problem was identified and before it was resolved? ❑Yes ❑No

Inspector	Signature	Date



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Covered by Statewide Construction General Permit? ❑Yes ❑No	High Priority Site? ❑Yes ❑No

Current weather (check all that apply)
❑Sunny ❑Cloudy ❑Windy ❑Rainy

Has there been rainfall with runoff since last inspection? ☐Yes ☐No

Reason for inspection: ❑Routine ❑Pre-Rain ❑During Rain ❑After Rain ❑Follow-up ❑Other (state):

CONTRA COSTA CLEAN WATER PROGRAM

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Dust Control	☐	☐	☐	☐	
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Active Treatment System	☐	☐	☐	☐	Comments
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Hazardous Materials ((paint, solvents)	☐	☐	☐	☐	
Waste Systems Management	☐	☐	☐	☐	
Soil Stockpiles	☐	☐	☐	☐	
Vehicle Servicing	☐	☐	☐	☐	
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Enforcement and Follow-up	Date Problem First Identified:	Next Follow Up Inspection Date:
Comments Enforcement Action: ❑ None/In compliance ❑ Verbal Notice ❑Notice to Comply ❑Notice of Violation ❑Stop Work ❑Administrative Fine		
Resolution ❑ Problem Fixed ❑ Need More Time ❑ Escalate Enforcement ❑ Date Problem Resolved: Was there rain with runoff after the problem was identified and before it was resolved? ❑Yes ❑No		
Inspector	Signature	Date

Project Information

Inspection Day Information

BMP Observations

Illicit Discharge Observations

Follow-up Actions

Sign & Date Form

Document BMP Observations and Actual and Potential Illicit Discharges

- ☑ Not Applicable
- ☑ Adequate
- ☑ Needs Attention
- ☑ Violation
- ■ Comments
  - ● Document needed actions for BMPs identified as Needs Attention or Violations
  - ● For actual or potential discharges give a time-frame to correct
    - ❑ Before next rain event or 10 business days
    - ❑ If longer than 10 business days, provide justification

Use the Inspection Form to Document Enforcement

- Re-inspection
- Enforcement action taken
- Resolution

Enforcement and Follow-up	Date Problem First Identified:	Next Follow Up Inspection Date:
Comments Enforcement Action: ❑ None/In compliance ❑ Verbal Notice ❑Notice to Comply ❑Notice of Violation ❑Stop Work ❑Administrative Fine		
Resolution ❑ Problem Fixed ❑ Need More Time ❑ Escalate Enforcement ❑ Date Problem Resolved: Was there rain with runoff after the problem was identified and before it was resolved? ❑Yes ❑No		

Inspector	Signature	Date

Documenting Enforcement

- For all situations documented as less than adequate on the inspection form
  - Take the appropriate level of enforcement
  - Failure to correct issues previously noted should result in escalated enforcement – moving up the enforcement tree
- Identify the timeframe for correcting the situation on the inspection form

Inspection Results are Rolled-Up in the Annual Report

- Each agency needs to track all inspections and enforcement actions
- Information tracked is summarized and reported annually to the Regional Water Board
- Complete, accurate reports from inspectors are a key element of the annual report.

Questions

Maggie Monahan

REGIONAL WATER BOARD INSPECTIONS AND ISSUES

Stormwater Inspections to BMP Improvements - What Works?

Maggie Monahan, P.E.

Senior Water Resource Control Engineer

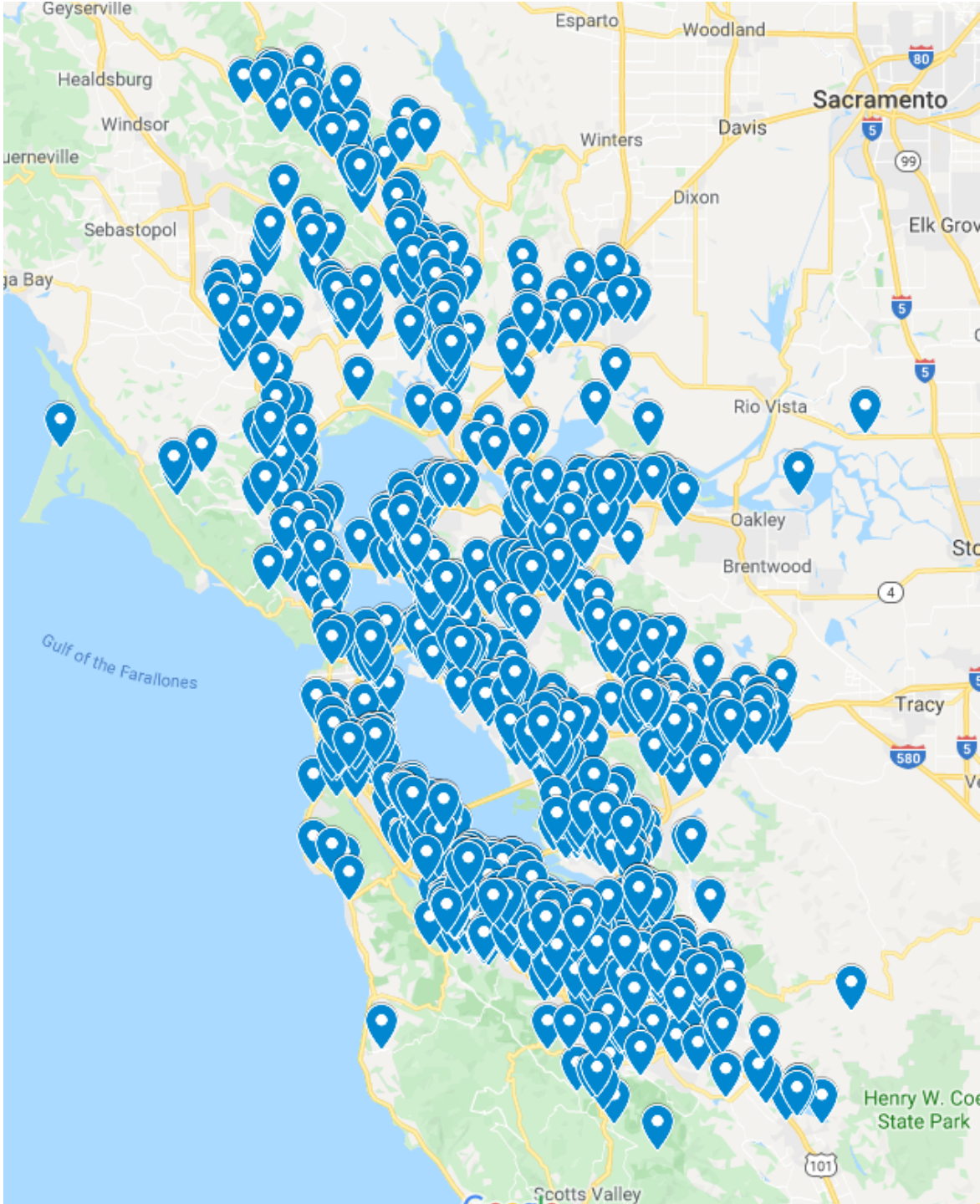
November 14, 2019

CALIFORNIA Water Boards

Industrial & Construction Stormwater Section

Maggie Monahan Sr. WRC Engineer	**Joe Monical** WRC Engineer	**Elyse Heilshorn** WRC Engineer	**Devender Narala** WRC Engineer	**Joseph Martinez** Scientific Aid	**Sooren Moosavy** Scientific Aid

Active Construction Sites enrolled in the CGP (11/13/19)



Outline

- Case example
- General Challenges
- Key Takeaways

Case example

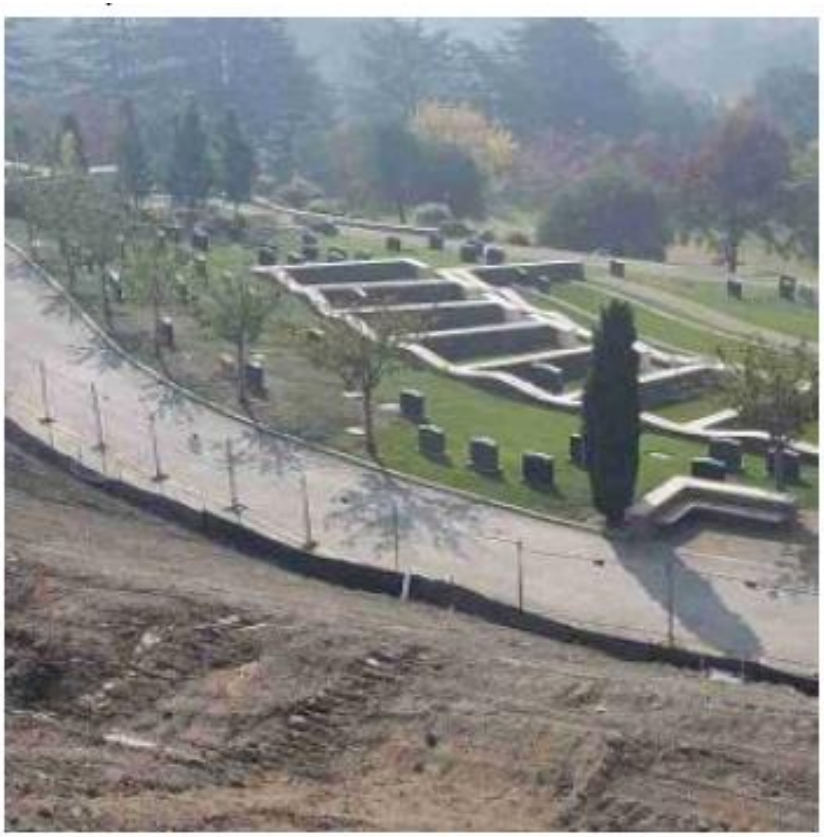
- Risk Level 2 site, with high sediment risk due to steep slopes
- Unannounced inspection
- Project in grading phase
- Observations
  1. Outdated stormwater pollution prevention plan
  2. Inadequate or failing sediment and perimeter controls
  3. Lack of erosion controls

Inspection Observations

Corrective Actions

Inspection Observations

Corrective Actions



Silt fence has been repaired at base of slope.

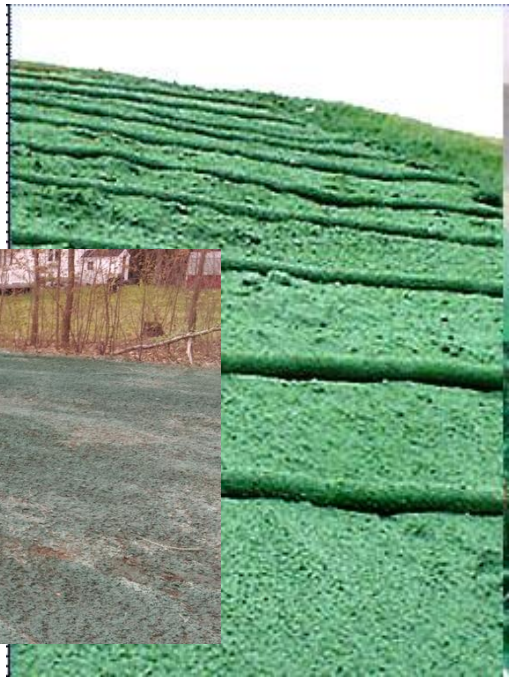
Corrective Actions

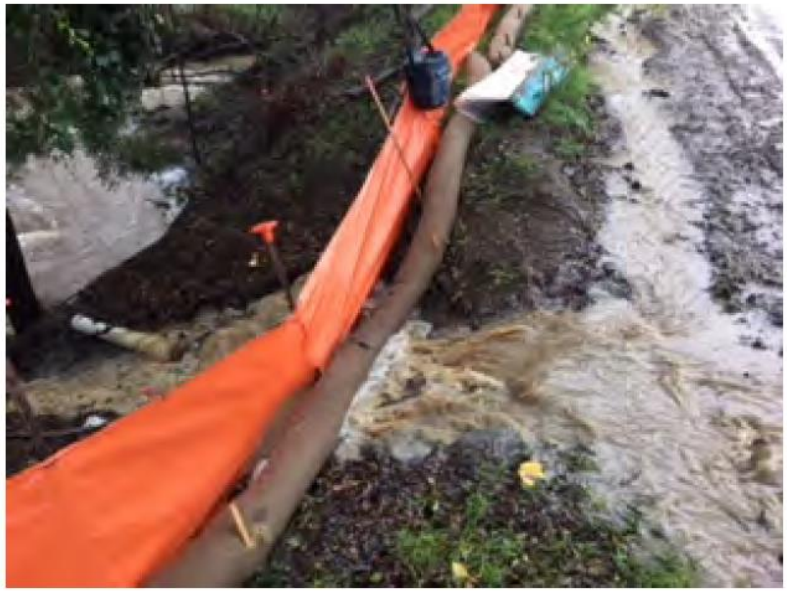
Silt fence has been added and streets were swept.

Exits have been swept and cleaned. No sediment track out is present.

Challenges

- Effective erosion control
- Active vs. inactive requirements
- Sediment basins
- Other pollutants
- Representative sampling
- Repeat violations or inadequate corrective actions





Key Takeaways

Inspections

- Check that the SWPPP reflects what the site is doing and REAPs are available onsite
- Talk to the people responsible for implementing the SWPPP; talk to multiple people individually

Follow-up

- Follow-up immediately after inspection – and transfer responsibility to the discharger
- Use the tools available to achieve compliance – escalate enforcement when necessary

- r2stormwater@waterboards.ca.gov