



Caltrans



Construction Academy (AKA "Boot Camp")



Environmental Issues

- Objectives
- Water Pollution Control
- Other Environmental Issues
- Archeological Site
- Summary

Objectives



- The participant will learn:
 - How to identify environmental issues
 - Correct and Incorrect BMP Installations
 - Understand the environmental requirements, policies, and laws that pertain to Caltrans Construction activities



Section 1: Water Pollution Control

Introduction

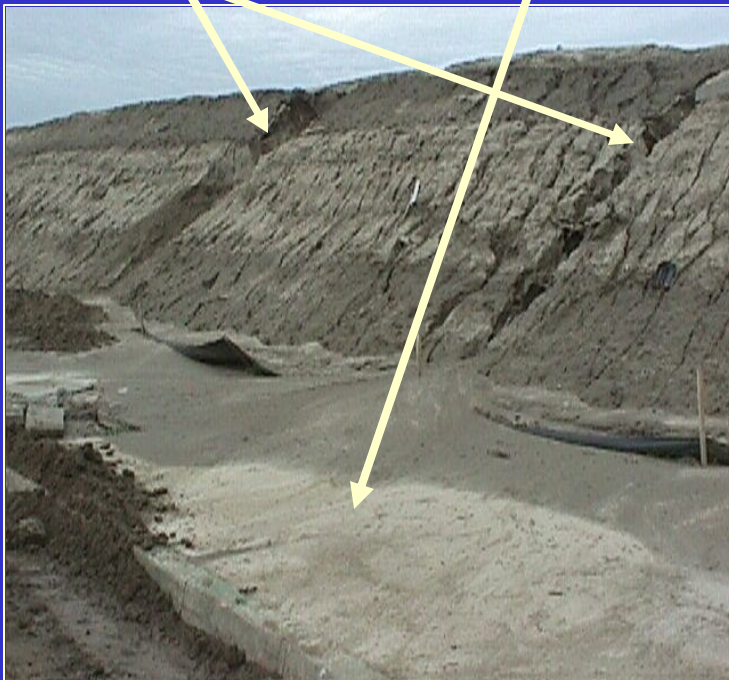


- What are the two primary factors that impact waters adjacent to construction sites?
- Visible Pollutants: Sediment, PCC, Petroleum
- Non-Visible Pollutants: Solvents, Acids, Fertilizers

Introduction

Construction Site Pollutants

Erosion and Sedimentation



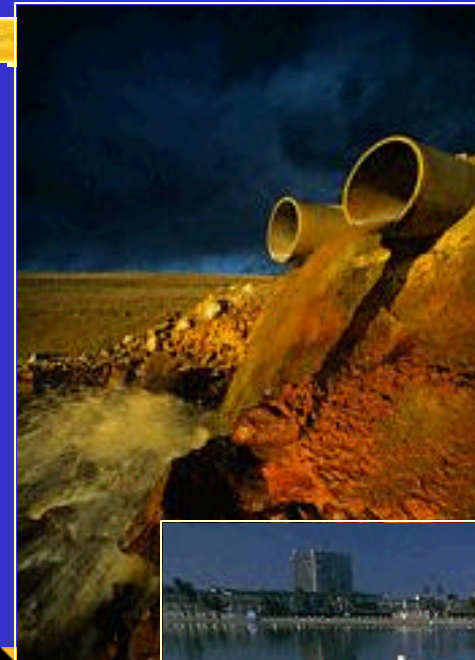
Construction Wastes



Introduction

- Forty percent of all U.S. waters are not fishable or swimmable, according to the U.S. EPA
- “Even a partial accounting shows that hundreds of millions of dollars are lost each year....due to urban stormwater pollution”

Natural Resources Defense Council



Introduction

- Construction site erosion can be 10 to 1,000 times greater than nature's erosion process

Ohio Department of Transportation



The Law



- Discharge of polluted storm water, into waters of the U.S. is prohibited
- The National Pollutant Discharge Elimination System (NPDES) permit regulate discharges to waters of the U.S.

Who Enforces These Laws?

- EPA
- SWRCB / RWQCB
- Other Agencies
- **Private Citizens**
 - NRDC
 - Baykeepers
 - Other Watchdog
 - Groups



What If We Don't Comply?

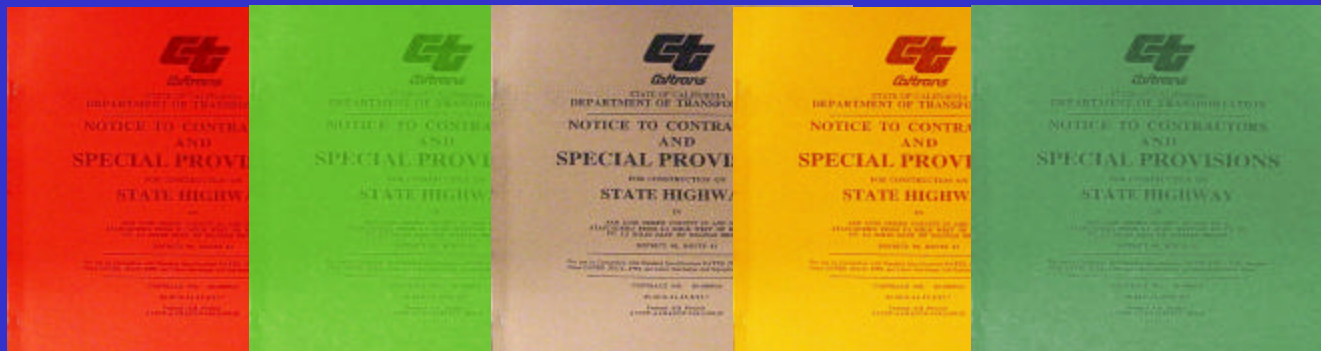
- Fines to \$32,500 Per Day – Per CWA
- Fines to \$15,000 Per Day and \$20 a gallon – Per Porter Cologne Act
- Current Regulatory Atmosphere
 - Violators will be held accountable



Contract Special Provisions

● Contract Special Provisions - Section 10

- Requires compliance with the NPDES Permit requirements
- Requires the use of Caltrans Storm Water Quality Handbooks
- Defines water pollution control requirements



Manuals



- Caltrans Storm Water Quality Handbooks
 - Project Planning and Design Guide
 - SWPPP / WPCP Preparation Manual
 - Construction Site BMPs Manual
 - Get Manuals online at <http://www.dot.ca.gov/hq/construc/stormwater/manuals.htm> or hard copies are available from Caltrans Publications
- Construction Manual
- Construction Site BMP Field Manual and Troubleshooting Guide
- Dewatering Guide
- Guidance for Temporary Soil Stabilization

Construction Site Best Management Practices - BMPs

Objectives:

- ☒ Promote Good Housekeeping
- ☒ Contain Waste
- ☒ Minimize Disturbed Areas
- ☒ Stabilize Disturbed Areas

Construction Site Best Management Practices - BMPs



Objectives:

- ☒ Protect Slopes and Channels
- ☒ Control Site Perimeter
- ☒ Control Internal Erosion

Construction Site Best Management Practices - BMPs

- BMP defined – a technique, measure or structural control that is used for a given set of conditions to manage the quantity and improve the quality of storm water runoff in the most cost-effective manner
- Sometimes referred to as temporary control practices

BMP Installation



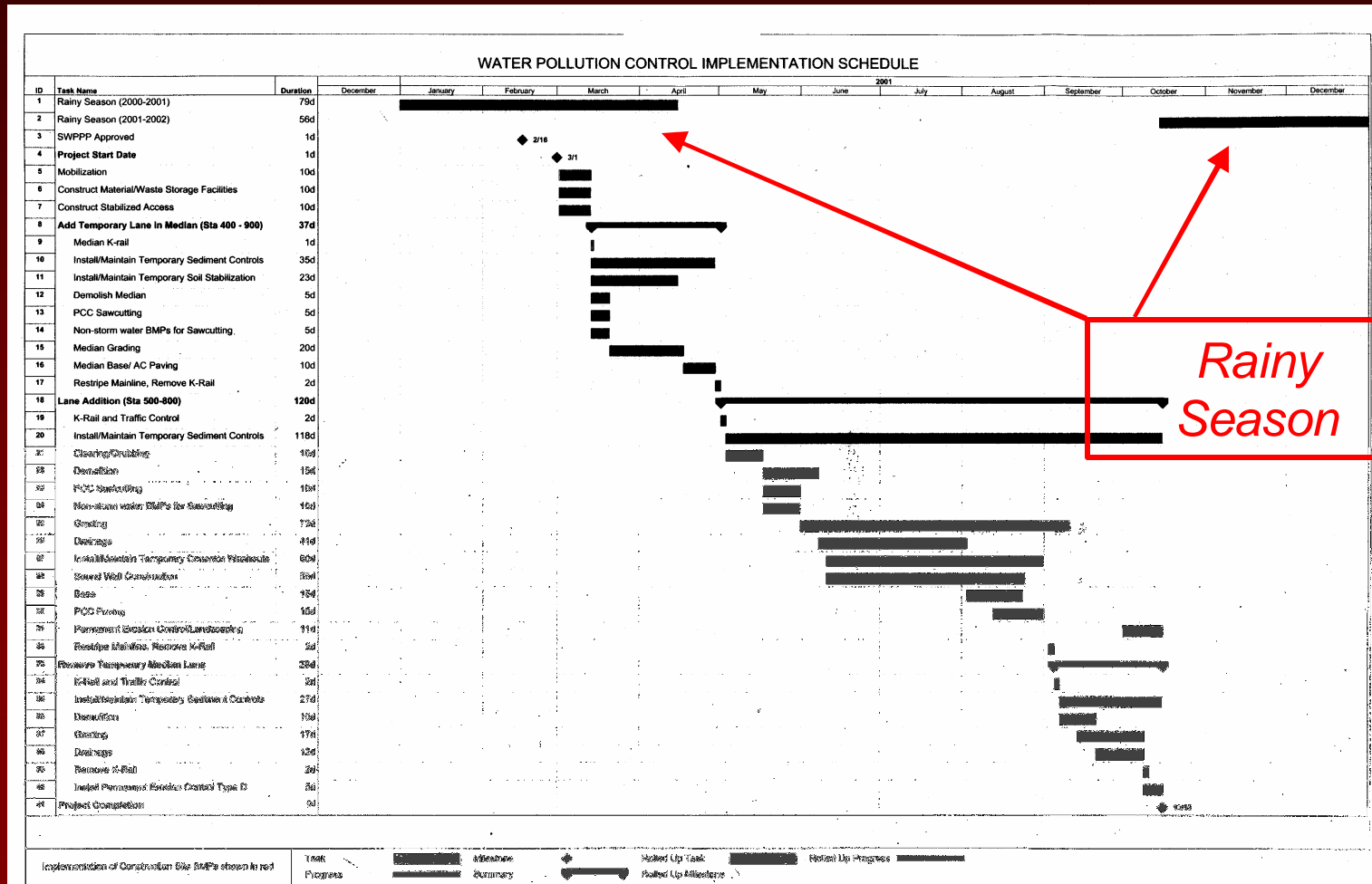
BMP Categories

- Temporary Soil Stabilization
- Temporary Sediment Control
- Wind Erosion Control
- Tracking Control
- Non-Storm Water Management
- Waste Management and Materials Pollution Control

BMP Use - Soil Stabilization

SS-1 Scheduling

Example of Graphical Schedule



BMP Installation - Soil Stabilization

SS-3 Hydraulic Mulch



Hydraulically applied paper mulch

Caltrans Requirements

- Mulch must be approved by RE or CSWC
- Prior to application, roughen embankment and fill areas
- Hydraulic matrices need 24 hours to dry before rainfall occurs to be effective unless approved by the RE
- Application rates per SS-3

BMP Installation - Sediment Controls



BMP Installation - Sediment Controls

SC-3 Sediment Trap



Requirements

- Size limited by availability of right-of-way
- Not appropriate for drainage areas greater than 5 acres
 - If captured runoff has not completely infiltrated within 72 hours dewater trap
- Fencing, in accordance with Standard Spec Section 80- "Fencing", shall be provided to prevent unauthorized entry

Sediment Trap without required fencing

Wind Erosion Control

ID

WE-1

BMP Name

Wind Erosion Control



BMP Installation - Tracking Control

TC-1 Stabilized Construction Entrance / Exit



Lack of stabilized entrance / exit

BMP Installation - Non-Storm Water

NS-2 Dewatering Operations



Caltrans Requirements

- Notify District Construction Storm Water Coordinator
- Use Caltrans' Field Guide to Construction Site Dewatering
 - Use where groundwater or accumulated precipitation will be discharged from site
 - Addresses sediment only
 - Notify RE if pollutant other than sediment is present
- Must comply with applicable permits

BMP Installation – Non-Storm Water

NS-6 Illicit Connection / Illegal Discharge

Caltrans Requirements

- Can be in liquid or solid form
 - Refers to discharges and dumping caused by parties other than contractor
- Inspect site before beginning of job
- Proceed with caution – notify RE, and CSWC at time of discovery



BMP Installation - Waste Management

WM-1 Material Delivery and Storage



Well maintained
temporary
containment
facility



Substances that
require storage in
a containment
facility



Caltrans Requirements

- Facility shall provide for a spill containment volume able to contain precipitation from a 24-hour, 25-year storm, plus 10% of the aggregate volume of all containers or 100% of the capacity of the largest container whichever is greater
- Facility shall be impervious to the materials for 72 hours

BMP Installation - Waste Management

WM-1 Material Delivery and Storage



Caltrans Requirements

- Liquids, petroleum products, and substances listed in 40 CFR Parts 110, 117, and 302 require containment
- During rainy season provide permanent cover and side wind protection

Temporary containment facility for fuel

BMP Installation - Waste Management

WM-8 Concrete Waste Management



Controlled concrete
washout



Uncontrolled concrete
washouts

Maintenance of BMPs



Maintenance of BMPs is a critical requirement for an effective water pollution control program

Water Quality Sampling and Analysis



● First things first

- Caltrans personnel will not be collecting any samples – this is the responsibility of the contractor or their lab
- Sampling and Analysis requirements apply only to SWPPP projects

Water Quality Sampling and Analysis

- What are these new Sampling and Analysis requirements intended to do?
 - The new requirements are intended to determine if BMPs implemented on the construction site are effective for preventing sediment/silt and other non-visible pollutants from impacting water quality objectives



Water Quality Sampling and Analysis

Pollutants Requiring Sampling

Sediment



Non-Visible



Water Quality Sampling and Analysis

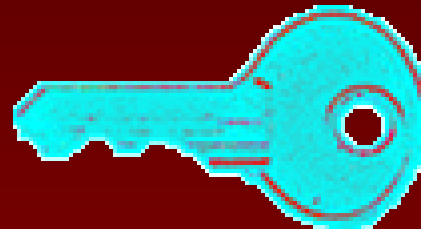
● Non-Visible Pollutants

- They are not visually detectable in storm water discharges
 - Examples: Acids, Solvents, Lime, Gypsum, Copolymer
 - Toxic properties: Caustic, Carcinogenic, Flammable etc..



Water Quality Sampling and Analysis

- **Make sure potential non-visible pollutants are:**
 - **Cleaned-up**
 - **Covered**
 - **Contained**



Construction Period Responsibilities



- Cover as topic item in pre-Construction meeting
- Review & approve plan
- Inspections - Caltrans self enforcement
- Request, review, & approve amendments for plan deficiencies

Construction Period Responsibilities



- Report illegal dumping
- Complete annual certificates (June 15th)
- Report non-compliance events to RE
- Complete Notice of Completion of Construction (NCC) at end of Construction

Inspections

● Frequency

- Prior to anticipated storm events
- During extended storm events (once each 24-hour period)
- After actual storm events
- As specified in the Special Provisions



Notice Of Discharge

- ➡ Action required upon discovery of a discharge or if the project receives a written notice or order from any regulatory agency
- ➡ Failure to report is subject to \$32,500 fine



Documentation

File Organization

- **Category 20**
- **Inspections - Daily Reports**
- **Correspondence**
- **Certifications – Annual due June 15**
- **SWPPP / WPCP**
- **Amendments**
- **Photographs**
- **Notice of Completion**
- **Retain for Three Years**

