

Industrial Facilities Monitoring

Module B-9.VI

**Audience: City Inspectors,
Facilities Managers**

Time: 2 hours





Industrial Facilities Monitoring Program Training

Name
Affiliation
Location
Date



Introduction



Introduction

Water Resources are Crucial to Orange County



Water provides recreation for Orange County residents.




It attracts tourists, boosting the local economy.

It is home to many types of wildlife.

Introduction

Potential Impacts




- Urban runoff and stormwater pollution can impact the ocean, beaches and creeks, harming wildlife and impairing peoples' ability to enjoy the water.

Introduction

Sources of Pollution


- Homes
- Businesses
- Construction sites
- Municipal facilities



Introduction

Path of Pollutants

- Potential pollutants may run off driveways, streets and gutters into stormdrains.
- The stormdrains lead to creeks and rivers, where pollutants can flow untreated into the ocean.




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Introduction

It's Everyone's Responsibility

- Urban runoff and stormwater pollution is not just a coastal issue-it starts in all regions of the community and affects water quality from the mountains to the ocean.



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Introduction

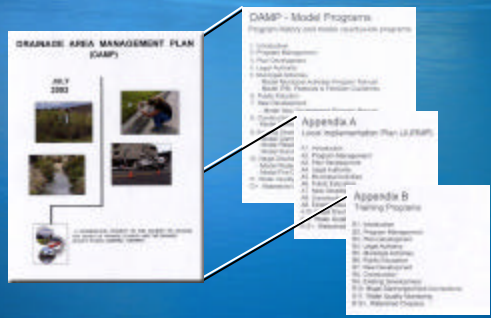
It's Your Responsibility

- Everyone must help to reduce urban runoff and stormwater pollution.
- This training will help explain what you can do while conducting industrial facilities monitoring to help implement the Orange County Stormwater Program.

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Introduction

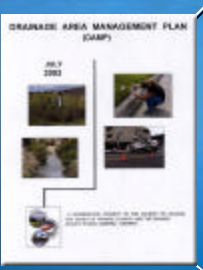
OC Stormwater Program



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Introduction

Program Elements



DAMP - Model Programs
Program history and model countywide programs

1. Introduction
2. Program Management
3. Plan Development
4. Legal Authority
5. Municipal Activities
6. Public Education
7. New Development
8. Construction
9. Existing Development
10. Illegal Discharges/Illicit Connections
11. Water Quality Monitoring - SDR/ SAR
12. Watershed Chapters

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Introduction

Training Outline

- Program Introduction
- Monitoring Requirements
- Monitoring Approach
- Break-
- Program Design and Implementation
- Reporting Procedures

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Introduction

Training Goal

To increase your understanding of the requirements for monitoring stormwater runoff from industrial facilities

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Introduction

Overall Approach

Cleaner Water

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Program Introduction

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Program Introduction

Industrial Monitoring Program Flow

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Program Introduction

Program Introduction

- Conducted independently by industrial facilities
- Fulfills requirements of Chapter 9 of the 2003 Orange County Drainage Area Management Plan (DAMP)
- Helps ensure compliance with Section F.3.g(5) of the San Diego regional board municipal stormwater permit

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Program Introduction

Implementation Schedule

Monitoring program consistent with the requirements of the 2003 DAMP must be implemented by February 13, 2003.

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Program Introduction


Monitoring Objectives

- Assist in characterizing the nature of industrial runoff
- Track changes in runoff characteristics over time
- Target actions to address high-priority problems
- Assess effectiveness of these actions

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Program Introduction

Questions ?



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Monitoring Requirements



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Monitoring Requirements

Industrial Monitoring Program Flow

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    graph TD
      A[Section 1.1-1.2 Program Introduction] --- B[Section 1.1.1 Monitoring Requirements]
      B --- C[Section 1.3 Monitoring Approach]
      B --- D[Section 1.4-1.7 Program Design and Implementation]
      D --- E[Section 1.8-1.10 Reporting Procedures]
    
```

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Monitoring Requirements

Who Needs to Monitor?

- High priority sites posing "high threats" to water quality:
 - Facilities subject to the statewide General Permit
 - Facilities subject to Section 313 of Title III of Superfund
 - Facilities tributary to 303(d) water body and which discharge relevant pollutants
 - Facilities within, adjacent to, or discharging to environmentally sensitive areas
 - All other facilities deemed to contribute significant loads to the stormwater system

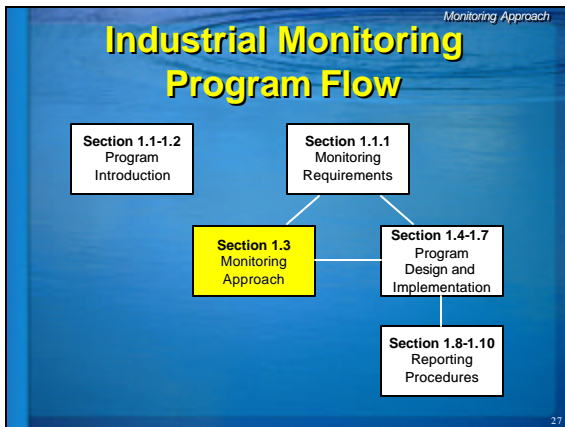
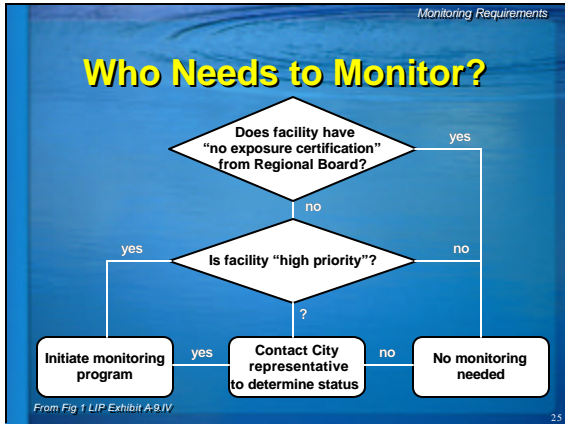
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Monitoring Requirements

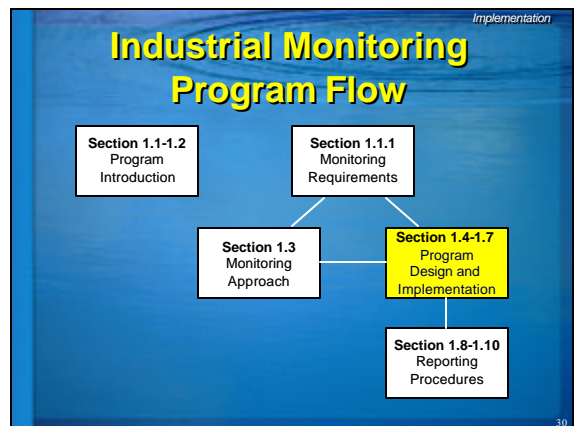
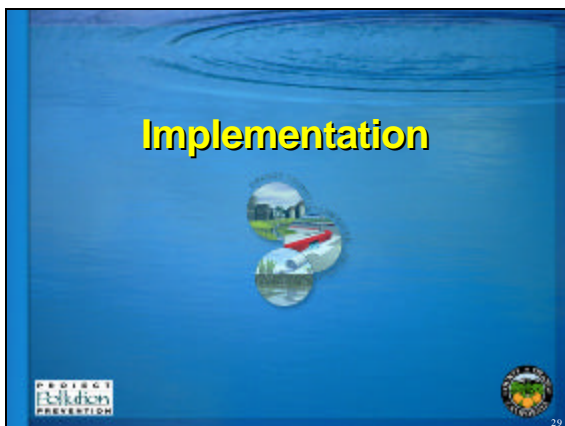
No Exposure Certification

- Exemption can be obtained if:
 - No unauthorized non-stormwater discharges emanate from facility
 - All authorized non-stormwater discharges are addressed in the SWPPP
 - All problematic areas have been inspected and cleaned
 - There are no significant industrial materials exposed to discharges
 - No activities or equipment are exposed to discharges
 - Stormwater is not exposed to industrial materials
 - The facility is periodically (at least once per year) reevaluated

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- ## Monitoring Approach
- Follows guidelines in the San Diego RWQCB NPDES permit
 - Depends on straightforward comparisons to criteria, limitations, standards
 - Allows judgments about discharges at time of sampling
 - Limited ability to track changes or trends over time
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Implementation

Select Sampling Locations

- Identify all discharges and discharge points
- Avoid commingled discharges
- Capture site-specific conditions
- When sites/areas can be consolidated
- When discharges cannot be accessed



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Implementation

Establish Sampling Frequency


- Monitor a minimum of two storms per year, e.g.:
 - During first hour of stormwater discharge
 - Contained water at time of discharge
 - During operating hours
 - Only after 3 working days without discharge

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Implementation

Select Common Constituents

- Common required analytes:
 - Total organic carbon, or
 - Total greases and oils
 - Total suspended solids
 - pH
 - Specific conductance



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Implementation

Select Specific Constituents


- Facility-specific analytes:
 - Toxic chemicals
 - Pollutants with permitted effluent limits
 - Parameters required by the Permittee
 - Parameters relevant to facility's SIC

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Implementation

Sampling Methods

- Use *Standard Methods for the Examination of Water and Wastewater*
- Use clean techniques, e.g.:
 - Gloves
 - Avoid any exhaust
 - Avoid touching the sample or container interior




Continued...
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Implementation

Sampling Methods (Continued)

- Calibrate and maintain all instruments and equipment
- Use 40 CFR Part 136 for lab procedures
- Use lab(s) certified by State DHS




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Implementation

Field Screening Methods

Analyte	Prescribed Method
pH	pH Meter
Turbidity	Turbidimeter – Nephelometric Method
Ammonia Nitrogen	HACH 10031 – Salicylate Method
Copper, Dissolved	HACH 8506 – Bicinchoninate Method



Refer to Table 2, LIP Exhibit A-9.IV for complete list.

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Implementation

Laboratory Methods

Analyte	Recommended Method ¹	Recommended Volume ¹	Recommended Holding Time ¹
Cadmium, Dissolved (ICP -MS)	EPA 200.8 / Std. 3125B	200 ml	6 months
Lead, Dissolved (ICP -MS)	EPA 200.8 / Std. 3125B	200 ml	6 months
Diazinon & Chlorpyrifos (GCMS)	EPA 525.2	1 liter	14 days
Fecal Coliform Bacteria (MF)	Std. 9222D	100 ml	6 hours

Refer to Table 2.b, LIP Exhibit A-9.IV for complete list.

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Implementation

Implementation Summary

```

    graph TD
      A[Identify sampling locations] --> B[Determine analytes]
      B --> C[Coordinate with lab (e.g. lab methods, sampling methods, reporting requirements)]
    
```

From Fig 1, LIP Exhibit A-9.IV

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Implementation

Implementation Summary

```

    graph TD
      A[Wait for appropriate storm event] --> B{Is storm causing runoff at sampling location?}
      B -- no --> A
      B -- yes --> C{Can sampling be conducted soon after runoff begins?}
      C -- no --> A
      C -- yes --> D[ ]
    
```

From Fig 1, LIP Exhibit A-9.IV

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Implementation

Implementation Summary

```




    graph TD
      A[Sample using clean techniques] --> B{Have two events been sampled?}
      B -- no --> C[Return to: Wait for appropriate storm event]
      B -- yes --> D[Produce report]
    
```

From Fig 1, LIP Exhibit A-9.IV

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Implementation

Questions ?

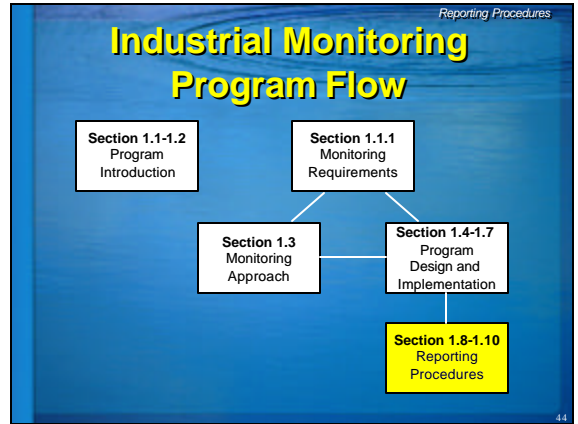




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Reporting Procedures



PROJECT Evolution PREVENTION



- Reporting Procedures
- ## Standardizing Reporting
- Use standardized data reporting formats
 - This will:
 - Reduce transcription errors
 - Speed analysis and interpretation
 - Aid regulatory review
 - Facilitate data aggregation

- Reporting Procedures
- ## Required Information
- Facility name
 - SIC code
 - Date
 - Time of collection
 - Time since runoff began
 - Site
 - Sampler
 - Parameter value

- Reporting Procedures
- ## Reporting Formats
- Sample identifiers:

– Date	YYMMDD
– Time of collection	Military
– Time since runoff began	hh:mm
- Based on Table 3, LIP Exhibit A-9.IV
- Continued...

Reporting Procedures

Reporting Formats (Continued)

Field measurements:

? Ammonia Nitrogen	mg/l
? Copper, Dissolved	? g/l
? pH	pH units
? Turbidity	ntu

Refer to Table 3, LIP Exhibit A-9.IV for complete list.

Continued...

Reporting Procedures

Reporting Formats (Continued)

Field measurements:

? Cadmium, dissolved	? g/l
? Diazinon & Chloropyrifos	? g/l
? Fecal Coliform	cfu/100 ml
? Lead, Dissolved	? g/l

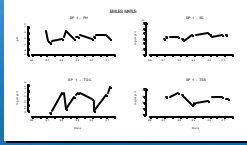
Refer to Table 3, LIP Exhibit A-9 JV for complete list.

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Reporting Procedures

Data Analysis / Evaluation

- Rely on three methods:
 - Compare with appropriate criteria
 - Plot data values over time
 - Interpret subjectively using all relevant knowledge



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Reporting Procedures

Records Retention

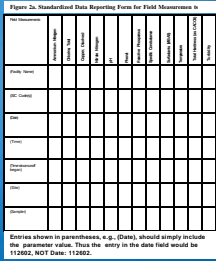
- Retain monitoring records for at least five years
- Include:
 - Date, time, location of sampling
 - Sampler(s)
 - Date, time, location of analyses
 - Individuals performing analyses
 - All laboratory results
 - Instrument records
 - Supporting documentation

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Reporting Procedures

Periodic Reports

- Submit annual report by July 1
- Use EXACT spelling, units, column order
- Highlight any exceptions to standard formats



Continued...
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Reporting Procedures

Periodic Reports (Continued)

- Annual reports should include:
 - Copies of laboratory reports
 - Evaluation of analytical results
 - Explanation of any procedural deviations
 - All information described above

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Conclusion

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Conclusion

Conclusion


- Certain categories of industrial facilities must be monitored
- Monitoring requirements are specified in the DAMP
- It is important to use standardized sampling, analysis, and reporting methods

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Conclusion

Remember

- Everyone benefits from clean water, and everyone has a responsibility to protect it by reducing urban runoff and stormwater pollution.




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Conclusion

Resources



For more information:
Visit www.ocwatersheds.com
or
Call the Orange County Stormwater Program at 714-567-6363.



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Thank You!

Thank you for attending and learning how you can help!



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