

QUALIFYING RAIN EVENT SAMPLING AND ANALYSIS PLAN

CEM-2049 (NEW 4/2012)

PROJECT INFORMATION NAME AND SITE ADDRESS	CONTRACT NUMBER/CO/RTE/PM
	PROJECT IDENTIFIER NUMBER
	WDID NUMBER
CONTRACTOR NAME AND ADDRESS	PROJECT SITE RISK LEVEL <input type="checkbox"/> Risk Level 1 <input type="checkbox"/> Risk Level 2 <input type="checkbox"/> Risk Level 3
SUBMITTED BY CONTRACTOR (PRINT AND SIGN NAME)	DATE

Qualifying Rain Event Sampling and Analysis Plan

Weather Forecast Information

Weather Forecast at _____ (time) _____ (date)

24-Hour Forecast	48-Hour Forecast	72-Hour Forecast
Date:	Date:	Date:
Chance of Precipitation (%):	Chance of Precipitation (%):	Chance of Precipitation (%):
Amount of Precipitation (Inches):	Amount of Precipitation (Inches):	Amount of Precipitation (Inches):

Forecasted Amount of Precipitation

What is the forecasted cumulative amount of precipitation for storm event? _____ inches	If yes and the project is Risk Level 2 or Risk Level 3, complete this form. If yes and the project is Risk Level 1, stop here and use form CEM-2048, "Storm Event Sampling and Analysis Plan."
Is the forecasted cumulative amount of precipitation for storm event 1/2 inch or greater? <input type="checkbox"/> Yes <input type="checkbox"/> No	If no, stop here and use CEM-2048, "Storm Event Sampling and Analysis Plan."

Sampling Schedule

Based on the weather forecast, stormwater discharge sampling is required to begin on _____ (date) at approximately _____ (time).

Stormwater discharge sampling is required every 24 hours during an extended storm event. Based on the predicted duration of the storm event, storm water discharge sampling is required on the following dates:

_____ , _____ , _____ , _____ , _____

The order in which stormwater discharge sample location will be sampled:

- Numeric order by location number
- Reverse numeric order by location number
- The following specified order _____

Reason for specified sampling order _____

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Qualifying Rain Event Sampling and Analysis Plan

Complete "Qualifying Rain Event Sampling and Analysis Worksheet" to determine sampling locations for storm event.

Non-Visible Pollutant Sampling Locations

Complete worksheet to determine non-visible pollutant sampling locations.

- No sampling locations for non-visible pollutants exist for this storm event.
- Table 1 shows sampling locations for non-visible pollutants for this storm event.

Table 1: Rain Event Non-Visible Pollutant Sampling Locations

Location Number	Uncontaminated Location Number	Location	Sample Type	Water Quality Indicator Constituent	Analysis

Stormwater Discharge Sampling Locations

- No sampling locations for turbidity and pH exist for this storm event.
- Table 2 shows sampling locations for required turbidity and pH analysis, optional SSC analysis, and other analysis for this storm event.

Table 2: Storm Event Sampling Locations for Turbidity and pH

Location Number	Location	Required Analysis	Optional Analysis
		<input type="checkbox"/> Turbidity <input type="checkbox"/> pH	<input type="checkbox"/> SSC <input type="checkbox"/> Other
		<input type="checkbox"/> Turbidity <input type="checkbox"/> pH	<input type="checkbox"/> SSC <input type="checkbox"/> Other
		<input type="checkbox"/> Turbidity <input type="checkbox"/> pH	<input type="checkbox"/> SSC <input type="checkbox"/> Other
		<input type="checkbox"/> Turbidity <input type="checkbox"/> pH	<input type="checkbox"/> SSC <input type="checkbox"/> Other
		<input type="checkbox"/> Turbidity <input type="checkbox"/> pH	<input type="checkbox"/> SSC <input type="checkbox"/> Other
		<input type="checkbox"/> Turbidity <input type="checkbox"/> pH	<input type="checkbox"/> SSC <input type="checkbox"/> Other
		<input type="checkbox"/> Turbidity <input type="checkbox"/> pH	<input type="checkbox"/> SSC <input type="checkbox"/> Other

Other Analyses Required _____

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Project Site Run-on Sampling Locations

- No project site run-on locations to be sampled exist for this storm event.
- Table 3 shows sampling locations for project site run-on for this storm event.

Table 3: Run-on Sampling Locations

Location Number	Location	Required Analysis	Optional Analysis
		<input type="checkbox"/> Turbidity <input type="checkbox"/> pH	<input type="checkbox"/> SSC <input type="checkbox"/> Other
		<input type="checkbox"/> Turbidity <input type="checkbox"/> pH	<input type="checkbox"/> SSC <input type="checkbox"/> Other
		<input type="checkbox"/> Turbidity <input type="checkbox"/> pH	<input type="checkbox"/> SSC <input type="checkbox"/> Other
		<input type="checkbox"/> Turbidity <input type="checkbox"/> pH	<input type="checkbox"/> SSC <input type="checkbox"/> Other
		<input type="checkbox"/> Turbidity <input type="checkbox"/> pH	<input type="checkbox"/> SSC <input type="checkbox"/> Other
		<input type="checkbox"/> Turbidity <input type="checkbox"/> pH	<input type="checkbox"/> SSC <input type="checkbox"/> Other

Other Analyses Required _____

Project Site Receiving Water Sampling Locations

- No receiving water locations to be sampled exist for this this storm event.
- Table 4 shows receiving water sampling locations for this storm event.

Table 4: Receiving Water Sampling Locations

Location Number	Location	Required Analysis	Optional Analysis
		<input type="checkbox"/> Turbidity <input type="checkbox"/> pH	<input type="checkbox"/> SSC <input type="checkbox"/> Other
		<input type="checkbox"/> Turbidity <input type="checkbox"/> pH	<input type="checkbox"/> SSC <input type="checkbox"/> Other
		<input type="checkbox"/> Turbidity <input type="checkbox"/> pH	<input type="checkbox"/> SSC <input type="checkbox"/> Other
		<input type="checkbox"/> Turbidity <input type="checkbox"/> pH	<input type="checkbox"/> SSC <input type="checkbox"/> Other
		<input type="checkbox"/> Turbidity <input type="checkbox"/> pH	<input type="checkbox"/> SSC <input type="checkbox"/> Other
		<input type="checkbox"/> Turbidity <input type="checkbox"/> pH	<input type="checkbox"/> SSC <input type="checkbox"/> Other

Other Analyses Required _____

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Table 5: Sampling Locations for Rain Event Listed in Numeric Order

Number	Location Number	QCQA									
1			11			21			31		
2			12			22			32		
3			13			23			33		
4			14			24			34		
5			15			25			35		
6			16			26			36		
7			17			27			37		
8			18			28			38		
9			19			29			39		
10			20			30			40		

Qualifying Rain Event Sampling and Analysis Plan Certification

I certify under penalty of law that this Qualifying Rain Event Sampling and Analysis Plan was prepared by me or under my direction or supervision. The information contained in the summary was gathered and evaluated by qualified personnel before submittal. Based on my review of the information and inquiry of those who gathered and evaluated the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that Section 309 (c)(4) of the Clean Water Act (CWA) provides for significant penalties, including fines and imprisonment, for knowingly submitting false material statement, representation, or certification.

Water pollution control manager name	Date
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Water pollution control manager signature

Qualifying Rain Event Sampling and Analysis Plan Review

Reviewed by resident engineer (name)	Date
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Resident engineer signature

Instructions

FORM

Contract Number/Co/Rte/PM

For local agency encroachment permit projects write the encroachment permit number in the Contract Number field.

Project Identifier Number

Caltrans projects starting July 1, 2010, will have a project identifier number. For projects without a PID, write N/A in the field.

WDID Number

For projects with Water Pollution Control Program, enter "WPCP" in this field.

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WATER POLLUTION CONTROL MANAGER NAME	PROJECT IDENTIFIER NUMBER
WATER POLLUTION CONTROL MANGER SIGNATURE	WDID NUMBER
	DATE

Qualifying Rain Event Sampling and Analysis Plan Worksheets**Determining Non-visible Pollutant Sampling Locations**

Instructions: Enter the potential non-visible pollutant sampling locations from SWPPP Attachment EE. From pre-storm site visual monitoring inspection, determine if the pollutant source is present and check the appropriate box. For each potential non-visible sampling location, determine from the pre-storm site visual monitoring inspection if any of the five criteria for triggering sampling and analysis for non-visible pollutant are met and check the appropriate box in "Pre-storm site inspection identified trigger for sampling?" column.

The five triggers for sampling non-visible pollutant sampling locations are:

1. Materials or waste containing non-visible pollutants are not stored under watertight conditions.
2. Materials or waste containing non-visible pollutants are stored under watertight conditions, but (1) a breach, malfunction, leakage, or spill is observed, (2) the leak or spill is not cleaned up before the storm event, and (3) a potential exists for discharge of non-visible pollutants.
3. A construction activity with potential to contribute non-visible pollutants (1) was occurring within 24 hours before the storm event; (2) applicable BMPs were observed to be breached, malfunctioning, or improperly implemented; and (3) a potential exists for discharge of non-visible pollutants.
4. Soil amendments have been applied and the potential exist for a discharge of non-visible pollutants.
5. Stormwater runoff from an area contaminated by historic site use has the potential to combine with stormwater runoff from the site and potential exists for a discharge of non-visible pollutants.

Non-visible Pollutant Sampling Required?

- No—If no pollutant sources are present, sampling stormwater discharges for non-visible pollutants is not required.
- No—If pre-storm site visual monitoring inspection identified no triggers that require sampling for non-visible pollutants, sampling stormwater discharges for non-visible pollutants is not required.
- Yes—If the pollutant source is present and the answer to any trigger question above is "yes," check the box in the "Storm Event Sample Locations" column.

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Qualifying Rain Event Sampling and Analysis Plan Worksheets, continued**Worksheet for Determining Rain Event Sampling Locations for Turbidity and pH for Risk Level 2 and Risk Level 3 Projects for Qualifying Rain Events****Determining Sampling Locations Based on Turbidity**

Instructions: List on Table C all project stormwater discharge sampling locations shown in SWPPP Attachment EE Table, "Project Site Discharge Sampling Locations for Turbidity and pH." Basing your decision on pre-storm site visual monitoring inspection, determine if any disturbed soil areas exist at each location and check the appropriate box in Table C. Enter the drainage area in acres for each location from SWPPP Attachment EE. During the pre-storm site monitoring inspection, for locations with disturbed soil area, determine the current disturbed soil area in acres and enter the information into Table C. Calculate and enter the percentage of drainage area that is disturbed soil area in Table C.

Verify with your RWQCB that this is acceptable.

Determine the Number of Sampling Locations for Representative Sampling Based on Turbidity

Check the appropriate following box used to determine representative sampling locations.

- If fewer than five discharge locations have disturbed soil area, sample them all. Check the box in the "Storm event sample location" column on Table C for all locations with disturbed soil area.
- If the project has 25 or fewer stormwater discharge sampling locations and if more than five discharge locations have disturbed soil area, select the five locations with the highest percentage of disturbed soil area to determine the storm event sampling locations. Check the box in the "Storm event sample location" column in Table C for all five locations.
- If more than 25 stormwater discharge sampling locations exist, determine the number of locations that must be sampled based on 20 percent of the total stormwater discharge sampling locations.

_____ (stormwater discharge locations) x .20 = _____ (number of sampling locations)

To determine the storm event sampling locations, select the required number of sampling locations with the highest percentage of drainage area that has disturbed soil area. Check the "Storm event sample location" column on Table C for each sampling location selected.

- If a previous storm event had a numeric effluent limitation exceedance, check the "Storm event sample location" column for all locations with disturbed soil area.

Determining Sampling Locations Based on pH

Project sites may have construction activities that affect the pH of stormwater discharges.

To ensure that selection of discharge locations with construction activities that may affect pH are included in project site representative sampling, follow this selection process:

Instructions: Based on pre-storm site visual monitoring inspection, determine if construction activity within each drainage area could affect the pH of stormwater discharges, and check the appropriate box in the column of Table C for each discharge location. Check the box in Table C Column A if both questions in the previous two columns have been answered "yes."

Basis for the Number of Sampling Locations for Representative Sampling

Check the appropriate box used to determine representative sampling location for pH.

- If fewer than five discharge locations have disturbed soil area and additional discharge locations have construction activities that could affect pH, base storm event representative sampling on locations selected using turbidity. Check the "Storm event sample location" column in Table C for all locations with disturbed soil area.
- If fewer than five discharge locations have disturbed soil area and no additional discharge locations have construction activities that could affect pH, sample all discharge locations with disturbed soil area and select the two additional locations with the highest potential for pH discharges, based on current construction activities that may affect the pH of stormwater discharges. Check the "Location selected for sampling based on pH?" box for each selected location, based on the highest potential for pH discharges. For locations with the box checked in the "Location selected for sampling based on disturbed soil area?" column or locations with the box checked in the "Location selected for sampling based on pH?" column, check the "Storm event sample location" column in Table C.
- If five or more discharge locations have disturbed soil area and at least two boxes in Column A are checked, base your storm event representative sampling on sampling locations you selected based on disturbed soil area. In Table C, check the "Storm event sample location" column for sampling locations with the box checked in "Location selected for sampling based on pH?" column.
- If five or more discharge locations have disturbed soil area and one or no box is checked in Column A, base additional sampling locations on pH. For discharge locations with no disturbed soil area but with construction activities that could affect pH, base all storm event sample locations on turbidity, and select two locations with the highest potential for pH discharges based on current construction activities. Check Table C in the "Storm event sample location" column for locations with the box checked in "Location selected for sampling based on disturbed soil area?" column or locations with the box checked in "Location selected for sampling based on pH" column.

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Qualifying Rain Event Sampling and Analysis Plan Worksheets, continued**Worksheet for determining additional storm event sampling locations based on previous storm event test results near numeric action levels**

Has the daily average for any discharge location exceeded the NTU daily average of 200 NTU, or was pH daily average outside the 6.5 to 8.5 range for any storm event?

- Yes—Complete the worksheet.
- No—Stop. No additional sampling locations are necessary for this storm event.

Instructions: If stormwater sample test results have exceeded limitations set for representative sampling, select additional sampling locations to sample and analyze 50 percent of the project site's stormwater discharge locations.

Determine the number of locations that must be sampled base on 50 percent of the total stormwater discharge sampling locations. (Section 700.2.4.3.3, SWPPP/WPCP preparation Manual, Jan 2012)

_____ (stormwater discharge locations) x .50 = _____ (number of sampling locations)

Check the box below used to determine representative sampling locations.

- If the number of sampling locations is five or fewer, no additional sampling locations need to be selected.
- If the number of sampling locations is determined to be more than 5, complete Table D. Copy the information from Table C for the first six columns of Table D. Use the information in the last column of Table C, "Storm event sample location," for column 7. If the NTU limit was exceeded, select additional sampling locations to meet the required number of representative sampling locations based on additional locations with the highest percentage of drainage area that is disturbed soil area. If pH range was exceeded, select additional sampling locations to meet the required number of representative sampling locations based on discharge locations with construction activities that could affect pH. Check the box in the "Additional Location selected for sampling based on disturbed soil area?" column for each additional discharge location selected for sampling.

