

STORM WATER SAMPLING CERTIFICATION TRAINING (CERTIFIED PERSONS)

SECTOR-SPECIFIC GENERAL PERMIT FOR STORM WATER RUNOFF
ASSOCIATED WITH INDUSTRIAL ACTIVITIES
FROM SCRAP METAL RECYCLING FACILITIES
WITHIN THE SANTA ANA REGION
(ORDER No. R8-2018-0069)

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SANTA ANA REGIONAL WATER QUALITY CONTROL BOARD





PLEASE SILENCE YOUR
ELECTRONIC DEVICES

TODAY'S AGENDA

- Planning
- Sampling
- Required Field Equipment
- Laboratories
- Review



PLANNING (BEFORE IT RAINS)

- You should know:
 - Who the Certified Person is
 - When to sample
 - Where to sample
 - How to sample
 - Organization of field equipment
 - Contracted laboratory
 - ELAP certified laboratory
 - Bottles ordered and on hand
 - If equipment was received from lab
 - Ice chest, sampling poles, gloves, etc
 - Labeling and sorting

Rain Event Action Plan (REAP)
40% chance or greater and no
more than three days in
advance (NOAA)

SAMPLING

Discharge points for storm water that has come in contact with industrial activity such as:

- Collection
- Sorting
- Processing
- Separation
- Storage – Materials and Chemicals
- Transportation – Vehicle area
- Anywhere plant activity takes place
- Roof runoff if material is corrugated or uncoated zinc metal



WHAT TRIGGERS SAMPLE COLLECTION?

A rain event that has 0.1 inches of rain or greater preceded by two consecutive dry days.

- ❖ Dry days are defined as days without any measurable storm event or with storm events with an intensity less than 0.1 inches of rain.

Section IV.B.4 of the Monitoring and Reporting Program states: “Permittees need not sample outside regular business hours or during unsafe conditions.”

Storm events that start before business hours but still have flow once business hours begin is considered an event

WHEN TO SAMPLE

- Discharge caused by a qualifying storm event
 - As the flow leaves the facility boundary
 - OR
 - As the flow enters and exits* LID type BMPs

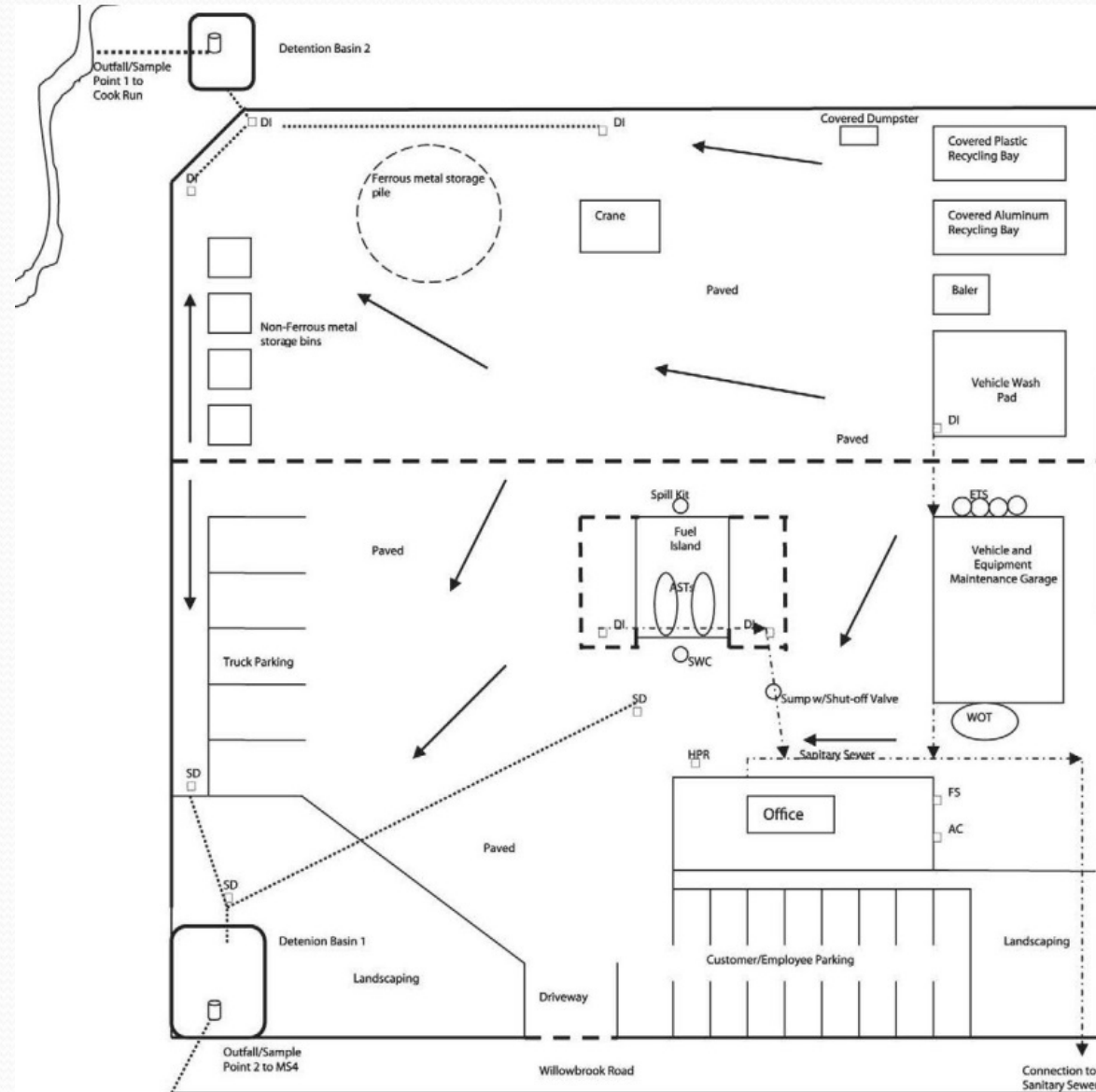
*Facilities who appropriately implement percolation or other infiltration LID-type BMPs are required to collect samples prior to the storm water entering the LID BMPs.
- Sample as close to the onset of discharge
- Not required to sample outside documented business hours or unsafe conditions
- Sample at least 4 storms per year
 - Two storms from July 1 through December 31
 - Two storms from January 1 through June 30

WHERE TO SAMPLE

- Observe the facility and locate the discharge locations
 - Where run-off leaves the facility boundary
 - Discharge points must be identified in the facility-specific SWPPP
- Low Impact Development (LID) BMPs:
 - Collect sample prior to storm water flow entering and exiting* the LID BMPs
 - *Facilities who appropriately implement percolation or other infiltration LID-type BMPs are required to collect samples prior to the storm water entering the LID BMPs.
 - Must identify all LID BMPs in the facility-specific SWPPP
- Samples must be collected prior to storm water comingling with other sources (i.e. neighbor run-on, industrial vs non-industrial areas, etc)

SWPPP must document any observed run-on from neighboring facilities.

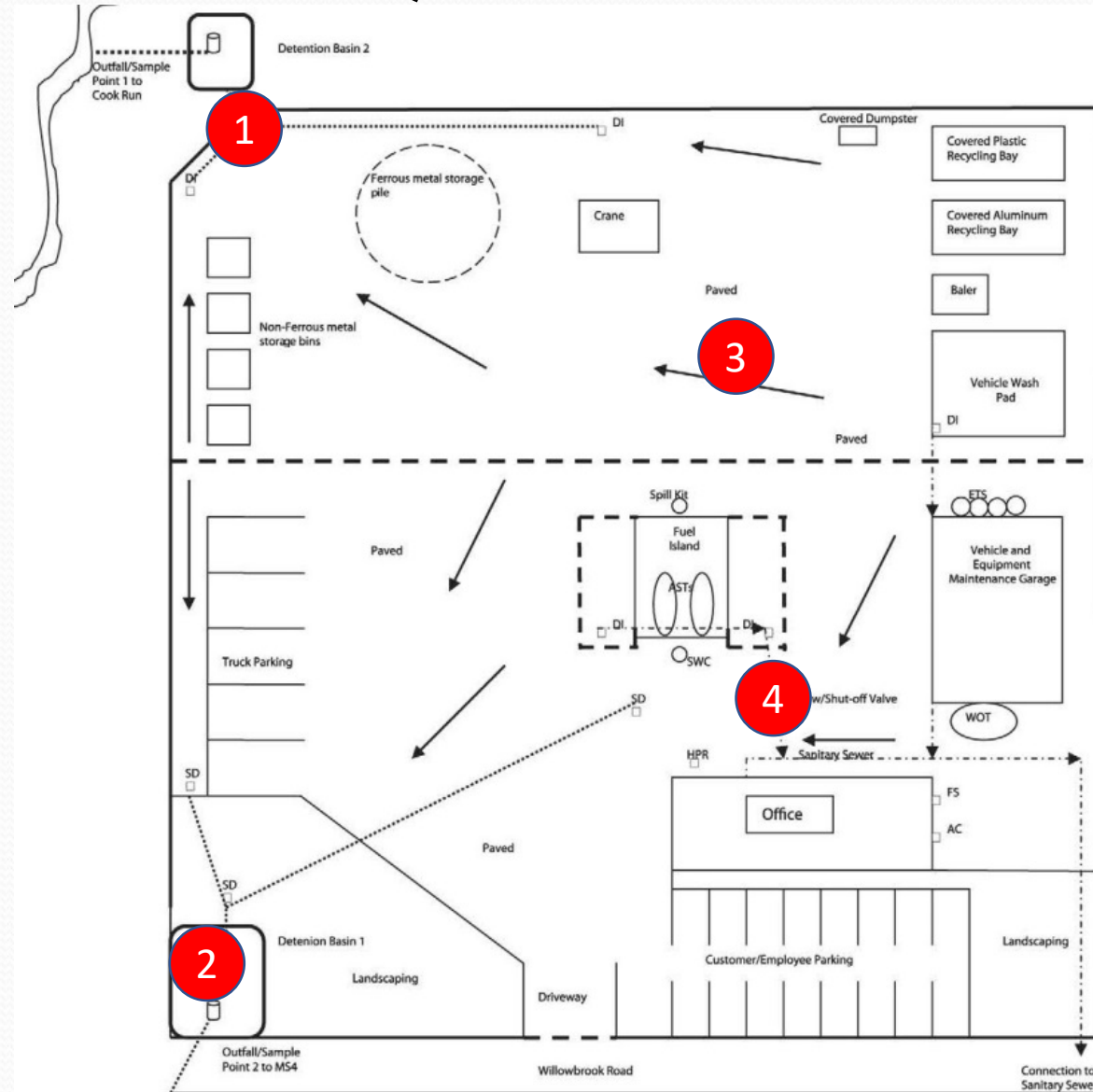
FACILITY MAP EXAMPLE





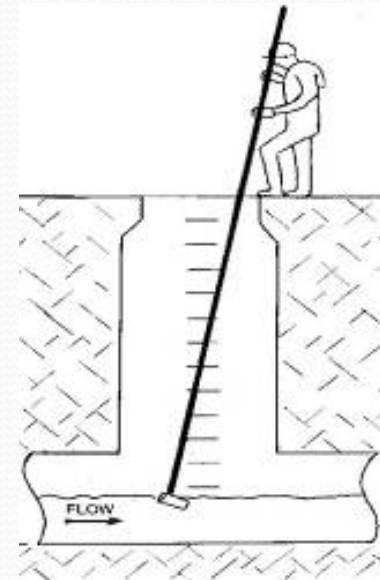
QUIZ #1

QUIZ #1



HOW TO SAMPLE

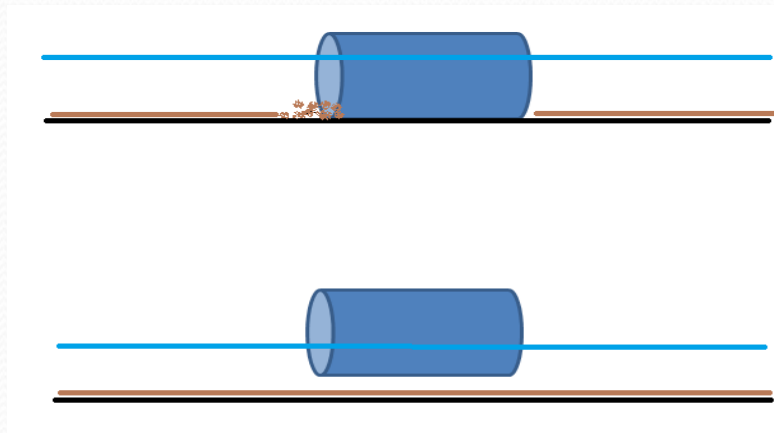
- Grab sample is a single sample 'grabbed' by filling a container either via hand or with a container attached to a pole
 - Oil & Grease samples must be collected directly into the appropriate sample container
 - Samples for all other permit-required parameters can be transferred via collection bottle
 - DO NOT overfill bottle(s) that contain preservative



HOW TO SAMPLE (CONT)

Storm Water Conveyances

- Open ditches, gutters, storm swales, etc that carry storm water from your facility offsite
 - Collect samples by simply placing the sample bottle into the flow to capture the water.
 - Ensure the bottle opening faces the upstream position



HOW TO SAMPLE (CONT)

- When collecting samples, the certified person must wear gloves for safety and to prevent sample contamination
- DO NOT DO:



RECORDING THE EVENT

- Record the field analysis as it is being conducted
 - Date and time of sampling and person who collected that sample
 - Individual who performed the analyses and the date and time of the analysis
 - Analytical techniques used
 - Equipment name and model
 - Results
- Retain all records for 5 years





QUIZ #2

REQUIRED FIELD EQUIPMENT

- pH, Turbidity, and Specific Conductance meter
- Many models on the market
- pH and conductivity are often combined into one meter
- Each meter varies and has vendor-specific instructions on how to calibrate
- Contact meter vendor for further instructions, if necessary

REQUIRED FIELD EQUIPMENT (CONT)



FIELD EQUIPMENT CALIBRATION

- Basic calibration of pH meters
 - Probe must be calibrated according to the manufacturers specification
 - Buffers of 4, 7, and 10
 - Must be rinsed with Deionized (DI) Water between readings
 - Allow the display to stabilize before recording the pH value



FIELD EQUIPMENT CALIBRATION (CONT)

- Basic calibration of conductivity meters
 - Select multi-point or single point calibration
 - Must be rinsed with DI water before reading standards and between sampling readings
 - Follow manufacturers guide for calibration
 - Conductivity readings take a few minutes per reading when compared to pH. Let the display stabilize before recording the conductance measurement.

FIELD EQUIPMENT CALIBRATION (CONT)

- Basic calibration of turbidity meters
 - The meter is for multi-point calibration and the standards are supplied with the meter
 - Follow manufacturers guide for calibration
 - Meter uses a sample vial, cup-like vessel to place in the standards and the sample into.
 - This vessel must be rinsed with DI water between readings
 - Allow the display to stabilize before recording the turbidity reading



METER MAINTENANCE

- Each meter has sensors that require care
 - Caution when cleaning sensor
 - Rinse using DI water
 - All meters have batteries that need to be replaced over time
 - Troubleshooting section in each manufacturer's manual

LABORATORIES

Selecting a Laboratory

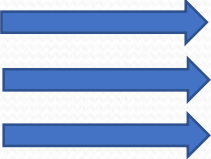
- Required to contract with laboratory that is a California certified laboratory (ELAP certified)
- The accreditation ensures that the lab is able to conduct quality analysis using the proper methodology
- List of accredited labs:

https://www.waterboards.ca.gov/drinking_water/certlic/labs/



CONTACTING A LABORATORY

- Contact the lab well in advance.
- Lab will provide sampling bottles and a Chain of Custody (CoC)



Constituent	Method	Bottle Type	Preservative	Holding Times
pH	Field Test	250ml Plastic	None/ 6 °C	ASAP
Turbidity	Field Test	Plastic	None/ 6 °C	ASAP
Conductance	Field Test	Plastic	None/ 6 °C	ASAP
Oil & Grease	EPA 1664-HEM	1 liter Amber Glass	H2SO4/ 6 °C	28 days
Total Petroleum Hydrocarbons	EPA 1664-SGT-HEM	1 liter Amber Glass	H2SO4/ 6 °C	7 days
Metals*	EPA 200.8	500ml Plastic	HNO3/ 6 °C	6 months
Chemical Oxygen Demand (COD)	SM 5220C	125ml Glass	H2SO4/ 6 °C	28 days
PCBs	EPA 608	1 liter Amber Glass	None/ 6 °C	7 days

*Metals = Aluminum, Cadmium, Copper, Iron, Lead, Nickel, Zinc

CONTACTING A LABORATORY (CONT)

Possible Questions for the Lab:

- Can extra bottles be provided for collecting the samples?
- How full do the bottles need to be filled?
- Are there any safety concerns with the bottles?
- Will the lab deliver the bottles and pick up the samples?
- Will the lab assist in completing the chain of custody form?



CONTACTING A LABORATORY (CONT)

Labeling Sample Bottles

- Labels may already be on the bottles
- Labels will indicate if the bottle contains a preservative
 - The scientific notation is used for preservatives
 - H₂SO₄ = Sulfuric Acid
 - HNO₃ = Nitric Acid
 - 6°C = 6 degrees Celsius (roughly 40°F)

Bottles containing preservative should not be used as a sample collection vessel (except O&G)

SAMPLE IDENTIFICATION

Labeling Sample Bottles

- Name of each sample for each sampling location
 - Label each sample bottle with the name of the SWPPP-identified sampling locations.
 - Sample bottles should:
 - Facility name
 - Sample location
 - Date and time of collection
 - Name of sample collector
- Use a water proof pen to label bottles (permanent markers work well)

CHAIN OF CUSTODY (CoC)

Laboratory Name															CHAIN OF CUSTODY RECORD														
Company					Phone					A.L. Job No.					Page of														
Project Manager					Fax					Analysis Requested					Test Instruction & Comments														
Project Name					Project #					Oil & Grease Conductivity TSS & pH Metals*																			
Site Name																													
& Address					1700 Saturn Way, Seal Beach, CA 90740																								
Sample ID	Lab ID	Date	Time	Matrix	Container Number/Size	Pres.																							
1						N/A	x	x									*Cd, Cr, Cu, Pb, Ni, Ag, Zn												
2																													
3																													
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Sample Receipt - To Be Filled By Lab					Turn Around Time					Relinquished By:					1 Relinquished By:					2 Relinquished By:					3				
Total Number of Containers					Normal																								
Custody Seals Yes No N/A					Rush					Signature					Signature					Signature									
Received in Good Condition Yes No					Same Day					Printed Name					Printed Name					Printed Name									
Properly Cooled Yes No N/A					24 Hrs					Date Time					Date Time					Date Time									
Samples Intact Yes No N/A					48 Hrs					Received By					1 Received By					2 Received By					3				
Samples Accepted Yes No					72 Hrs					Signature					Signature					Signature									
										Printed Name					Printed Name					Printed Name									
										Date Time					Date Time					Date Time									
PLEASE FILL IN THE YELLOW HIGHLIGHTED																													

SAMPLE DELIVERY



- Samples should be kept in cooler with ice
 - Temperature less than 6°C
 - Transport to contracted lab
- OR
- Have lab pick up samples

REVIEW

- Identify the Certified Person
- Contact lab well in advance of any upcoming storm event
 - Order bottles
 - Label bottles
- Watch weather forecast (40% chance or greater and no more than three days in advance)
- Check field equipment for battery charge and replace batteries as necessary
- Have Chain of Custody ready



QUIZ #3



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