

# Agricultural Water Quality Best Management Practices (BMPs)

**Remember: Only Rain in the Storm Drain**

Water is a natural resource that we all rely upon. Our regional receiving waters are a critical component of environmental quality, which is important for human health, local economies, tourism, and other beneficial uses. In San Diego County, there are nine western-facing watershed management areas, with rivers, streams, and stormwater runoff that flow down and into receiving waters such as rivers, lakes, and the Pacific Ocean. Water quality of receiving waters is related to upstream activities within watersheds. When pollution enters our receiving waters, aquatic life can be harmed by reducing oxygen levels, blocking light, or inhibiting photosynthesis. Pollutants may also lead to flooding, and excess nutrients may cause harmful algal blooms. Pollutants such as sediment, fertilizers, pesticides, and organic waste are commonly generated by agricultural activities and can contribute to pollution of our waterways if not managed properly.

The San Diego Regional Water Quality Control Board, through enforcement of a regional Municipal Separate Storm Sewer System (MS4) permit, requires San Diego County to implement a regulatory program that is designed to prevent pollutants generated at commercial agriculture operations from entering stormwater conveyances and impairing regional water quality.

The following are some **Best Management Practices (BMPs)** agriculture operations can use to prevent pollutants from impairing water quality in our region. BMPs are any type of pollution prevention or pollution control measure that achieves compliance with the Watershed Protection Ordinance (WPO). You can review the WPO at:

[www.sandiegocounty.gov/content/dam/sdc/dpw/WATERSHED\\_PROTECTION\\_PROGRAM/watershedpdf/WPO.pdf](http://www.sandiegocounty.gov/content/dam/sdc/dpw/WATERSHED_PROTECTION_PROGRAM/watershedpdf/WPO.pdf).

BMPs to protect water quality are required to be functioning at all times and implemented to prevent contamination of stormwater flows to the maximum extent practicable. BMPs must also effectively prevent dry weather non-stormwater discharges, such as preventing discharges of irrigation runoff.

## **BMP #1: Be aware of how stormwater flows across your property and how this impacts downstream water quality.**

- Stormwater is not treated before entering our local waters. Stormwater flowing through storm drains, ditches, and culverts flows untreated to creeks, bays, beaches, and the ocean.
- To protect receiving waters, operations must prevent the discharge of hazardous materials, trash, debris, and sediment to stormwater flows that will then carry contaminants into storm drains, streets, or ditches.
- Direct stormwater flows away from potential sources of pollution (e.g., areas with stockpiles, agricultural debris, and vehicle repair areas).
- Map your property and know where the drains on your property discharge.

**BMP #2: Ensure annual stormwater training is completed.**

- Train all employees with responsibility for activities that could result in unauthorized discharges of pollution or non-stormwater to be familiar with storm water discharge, best management practices, proper transportation of hazardous materials, and spill cleanup.
- Training must address the pollution and non-stormwater generating activities conducted at the facility, the pollutants or risk of non-stormwater discharge associated with those activities, and the BMPs or pollution prevention practices used to minimize or eliminate the discharge of non-stormwater and pollutants.
- Keep documentation of annual stormwater training completed by employees. You are encouraged to use the form attached at the end of this document.
- Stormwater Training Categories Include:
  - Preventive maintenance
  - Good housekeeping
  - Proper waste disposal
  - Non-stormwater disposal alternatives
  - Equipment/vehicle maintenance and repair
  - Spill response, containment, and recovery
  - Recycling, re-use, and volume reduction in materials, water consumption and wastes
  - BMP maintenance

**BMP #3: Use, store, and manage materials properly.**

- Store materials with the potential to contaminate runoff, in a manner that prevents contact with stormwater flows, and inspect these areas frequently.
- Tarp or cover stockpiles during rain or high wind events.
- Store onsite hazardous materials under cover and off the ground.
- Provide secondary containment for storage of hazardous materials, such as gasoline and diesel.
- Drain fluids from retired vehicles.
- Label hazardous material containers properly and inspect them frequently.
- Check that containers (such as fertilizer tanks and fuel containers) are in good condition without leaks.
- Do not wash vehicles and equipment near drains that connect to storm drains.
- Do not use hose off or single use degreasing chemicals for the cleaning of engines unless the chemicals and rinse water are captured and disposed of properly.
- Whenever possible, do repair and maintenance work indoors or undercover. If work must be done outside, other management practices should be used to prevent pollutant discharges.
- Practice good housekeeping by keeping your property clean of debris, litter, waste, and other materials will help to keep these materials from moving offsite with stormwater.
- Remove and dispose of debris, litter, waste, leaves, cut grass, and other materials from the site, and especially from stormwater conveyances.
- Inspect and clean work areas routinely.
- Protect stormwater inlets during loading, unloading, fueling, and other work activities. Designate a place for loading and unloading activities.

**BMP #4: Practice proper disposal methods.**

- Keep trash and disposal areas clear of loose or exposed debris to prevent dispersal by wind, rain, or animals.
- Close dumpsters and other containers when not in use. Since dumpsters leak, they are not appropriate for liquid waste.
- Capture and dispose of vehicle fluids and chemicals properly.
- Locate trash receptacles away from stormwater conveyances.
- Waste must be stored to prevent contact with rain and stormwater flows. Storage may require wastes to be kept off the ground and under cover or stored with secondary containment.
- Never dispose of waste in waterways or stormwater conveyances.
- Berm or enclose solid waste storage areas.
- Dispose of hazardous waste properly. Hazardous waste (such as batteries, fluorescent lamps, and used oil) should not be disposed of in the trash.
- Animal waste should be bermed or curbed to prevent it from discharging; otherwise, the waste should be cleaned or removed from the area routinely.
- Use dry clean up methods for loose aggregate, mortar, and dust by sweeping and vacuuming.
- Use dry clean up methods for liquid spills of oils, fuels, pesticides and liquid fertilizers.
- Rinse water from the cleaning of portable toilets must be contained and disposed of at a service facility, or disposed of in a sanitary sewer.
- Irrigation tailwater may be directed to landscaped areas or used to keep dust down on dirt roads.

**BMP #5: Use dry cleanup methods (spill kits).**

- Spill Kits made up of brooms, absorbents, dust pans, trash cans and other necessary materials should be kept at all sites of potential spills. These include loading docks, pesticide storage areas, vehicle, and equipment repair areas, fueling sites, and waste collection areas.
- Dry clean-up methods include sweeping, wiping, vacuuming, raking, or using absorbents.
- If you must use wet clean-up methods, take necessary precautions to prevent the discharge of wash water into the stormwater conveyance system.
- Have a process in place for employees to immediately report spills that cannot be completely contained.
- Keep materials for spill response accessible. These materials can include an absorbent material, personal protective equipment such as gloves and eyewear, a dustpan and broom, and a garbage bag to aid in clean up.
- Make sure to check the spill kit at least annually so that all the materials necessary for prompt spill cleanup are ready to be used.
- Tell your employees and operators where the spill kit is located and how to use your particular spill response kit.
- After cleanup, dispose of the waste in accordance with federal, state, and local laws.
- Know when to report a spill. Spills, releases, or discharges to receiving waters or the stormwater conveyance system are required to be reported in accordance with federal and state laws. If the spill is a potential threat to health, safety, or the environment, report the spill to the Stormwater Hotline at 888-846-0800.

#### **BMP #6: Prevent erosion and sediment loss.**

- Remove or contain accumulations of loose soil.
- Convey stormwater around potential areas of erosion.
- Stabilize graded areas with fiber mats, fiber rolls, geo-textiles or hydro-seeding.
- Erect silt fences or construct berms to prevent discharge of sediment.
- Implement sandbags, straw bales, straw wattles, mulch, strips of vegetation, and devices to prevent off-site tracking of sediment (e.g., rumble bars).
- Install sediment catch basins to promote settling out of sediments before stormwater flows leave your property.
- Build farm roads with sediment catch basins and culverts that convey stormwater flows under them in order to prevent farm road washouts.

#### **BMP #7: Carefully manage nutrients and pesticides.**

- Contact UCCE technical advisors (for FREE!) who can work with you to customize best practices specific to your operation (e.g., based on crop type and local environmental conditions such as rate of evapotranspiration and how this influences the amount of irrigation water you need to apply). See resources section below for UCCE contact information.
- Know when to apply nutrients (e.g., nitrogen and phosphorus) by routinely monitoring crop nutrient needs such as through use of leaf tissue analysis or soil tests (UCCE Advisors are available to provide technical assistance so you can interpret readings and respond effectively with improved nutrient management).
- Use integrated pest management to reduce the amount of pesticides required (UCCE technical advisors can assist with tailoring an integrated pest management program specific to your operational needs).
- Pesticides must be applied according to the law. If you need assistance to understand pesticide requirements, please contact the AWM Pesticide Regulation Program:  
[www.sandiegocounty.gov/content/sdc/awm/pesticides.html#:~:text=The%20Pesticide%20Regulation%20program%20ensures,homes%20and%20many%20public%20buildings.](http://www.sandiegocounty.gov/content/sdc/awm/pesticides.html#:~:text=The%20Pesticide%20Regulation%20program%20ensures,homes%20and%20many%20public%20buildings.)  
Pesticide Regulation Program hotline: 858-694-8980

#### **BMP #8: Manage Irrigation Water Properly.**

- Monitor crop water needs and only irrigate enough to meet those needs. Excess irrigation water must be managed effectively to prevent discharging from the site. UCCE technical advisors are available to assess irrigation practices and work with you to improve efficiencies that help you to be compliant with water quality standards, as well as helping you conserve water and save money.
- Assess your irrigation system to ensure proper distribution uniformity so your crop receives the right amount of irrigation water, without production of excessive irrigation runoff.
- Upgrade your irrigation system to include water-saving equipment.
- Check irrigation systems for worn or inefficient equipment; check for and repair leaks regularly; install filters to prevent equipment from clogging; and install pressure regulators.
- Manage irrigation ponds with best practices that protect water quality such as lining irrigation ponds to prevent the movement of water soluble chemicals to groundwater and to stormwater conveyances.
- Remove connections between irrigation ponds and stormwater conveyances, and prevent the discharge of irrigation pond overflow during rain and irrigation events.

**BMP #9: Reduce and recycle when feasible.**

- Implement pollution prevention strategies that reduce the amount of pollutants used or generated by your operation.
- Reuse water where feasible. Excess irrigation water can be collected and applied to roads for dust control. UCCE technical specialists are available to help you understand different water reuse and treatment technologies (e.g., use of chlorine and ozone for sanitizing water for reuse).
- Implement effective nutrient monitoring and integrated pest management programs that reduce the amount of contaminants applied to your crops that would then also be exposed to the environment.

**Resources**

**University of California Cooperative Extension (UCCE).** 858-822-7711. <http://cesandiego.ucanr.edu/>

**Natural Resources Conservation Service (NRCS).** 760-745-2061.  
[www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/technical/cp/ncps/?cid=nrcs143\\_026849](http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/technical/cp/ncps/?cid=nrcs143_026849)

**Mission Resource Conservation District (MRCD).** 760-728-1332. [www.missionrcd.org](http://www.missionrcd.org)

**Resource Conservation District of Greater San Diego County.** 619-562-0096. [www.rcdsandiego.org](http://www.rcdsandiego.org)

**Upper San Luis Rey Resource Conservation District.** 760-742-3704. [uppersanluisreyrcd.org](http://uppersanluisreyrcd.org)

**AWM Agricultural Water Quality (AWQ) Program.** 858-614-7786. AWQ.AWM@sdcounty.ca.gov  
[www.sandiegocounty.gov/content/sdc/awm/ag\\_water.html](http://www.sandiegocounty.gov/content/sdc/awm/ag_water.html)

**AWM Pesticide Regulation Program.** 858-694-8980  
[www.sandiegocounty.gov/content/sdc/awm/pesticides.html#:~:text=The%20Pesticide%20Regulation%20program%20ensures,homes%20and%20many%20public%20buildings.](http://www.sandiegocounty.gov/content/sdc/awm/pesticides.html#:~:text=The%20Pesticide%20Regulation%20program%20ensures,homes%20and%20many%20public%20buildings.)

**San Diego County Department of Environmental Health and Quality, Hazardous Materials Division.** 858-505-6880. <https://www.sandiegocounty.gov/content/sdc/deh/hazmat.html>

\*This document has been developed by the County of San Diego, Department of Agriculture, Weights and Measures, and references Title 6, Division 7, Chapter 8, of the San Diego Code of Regulatory Ordinances ([http://www.amlegal.com/sandiego\\_county\\_ca/](http://www.amlegal.com/sandiego_county_ca/)). This information may not be comprehensive and is meant to serve as a guide; additional best management practices may be needed as appropriate.

The following are **USDA Natural Resources Conservation Service (NRCS) Conservation Practices** that may work as BMPs for your operation. NRCS provides detailed information for each practice:

[www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/technical/cp/ncps/?cid=nrcs143\\_026849](http://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/technical/cp/ncps/?cid=nrcs143_026849).

Representatives from NRCS and UCCE are available to assist with technical support and implementation of these practices. Please refer to the Resources section of this document for contact information.

1. Conservation Cover (327)
2. Contour buffer strips (332)
3. Contour farming (330)
4. Contour orchard and other perennial crops (331)
5. Cover crop (340)
6. Critical area planting (342)
7. Denitrifying bioreactor (605)
8. Diversion (362)
9. Field border (386)
10. Grassed waterway (412)
11. Irrigation system, surface and subsurface (443)
12. Irrigation ditch lining (428)
13. Irrigation water management (449)
14. Irrigation system, microirrigation (441)
15. CPS mulching (484)
16. Residue and tillage management, no till (329)
17. Nutrient management (590)
18. Pond sealing or lining – concrete (522)
19. Pond sealing or lining – geomembrane or geosynthetic clay liner (521)
20. Residue and tillage management, reduced till (345)
21. Riparian forest buffer (391)
22. Rock wall terrace (555)
23. On-farm secondary containment facility (319)
24. Sediment basin (350)
25. Soil disposal (572)
26. Stripcropping (585)
27. Terrace (600)
28. Tree/shrub establishment (612)
29. Vegetative barrier (601)
30. Nutrient management plan – written (104)
31. Comprehensive nutrient management plan – written (102)
32. Integrated pest management plan – written (114)
33. Soil health management plan – written (116)
34. Irrigation water management plan = written (118)
35. Drainage water management plan – written (130)
36. Fish and wildlife habitat plan -written (136)
37. Soil testing (216)
38. Agrichemical handling facility (309)
39. Alley cropping (311)
40. Waste storage facility (313)
41. Herbaceous weed treatment (315)
42. Composting facility (317)
43. Short-term storage of animal waste and byproducts (318)
44. Irrigation canal or lateral (320)
45. Conservation crop rotation (328)
46. Roofs and covers (367)
47. Pond (378)
48. Multi-story cropping (379)
49. Riparian herbaceous cover (390)
50. Stream habitat improvement and management (395)
51. Grade stabilization structure (410)
52. Hedgerow planting (422)
53. Roof runoff structure (558)
54. Access road (560)
55. Heavy use area protection (561)
56. Stream crossing (578)
57. Streambank and shoreline protection (580)
58. Open channel (582)
59. Channel bed stabilization (584)
60. Structure for water control (587)
61. Pest management conservation system (595)
62. Subsurface drain (606)
63. Salinity and sodic soil management (610)
64. Underground outlet (620)
65. Vegetated treatment area (635)
66. Soil carbon amendment (808)
67. Stream corridor bank stability improvement (E580A)
68. Stream corridor vegetation improvement (E580B)
69. Improving nutrient uptake efficiency and reducing risk of nutrient losses (E590A)
70. Reduce risks of nutrient loss to surface water by utilizing precision agriculture technologies (E590B)
71. Reduce risk of pesticides in surface water by utilizing precision pesticide application techniques (E595A)
72. Reduce risk of pesticides in water and air by utilizing IPM PAMS techniques (E595B)
73. Mulching to improve soil health (E484A)
74. Cover crop to reduce water quality degradation by utilizing excess soil nutrients (E340G)

## STORMWATER TRAINING RECORD

(Training Required Annually)

BUSINESS NAME:		PHONE:	
STREET ADDRESS:			
CITY AND ZIP:			

TRAINER NAME:		TRAINER TITLE:	
TRAINER SIGNATURE:			

### CATEGORIES TO INCLUDE IN TRAINING

(Check when completed.)

- Preventive Maintenance
- Good Housekeeping
- Proper Waste Disposal and Non-Stormwater Disposal Alternatives
- Equipment/Vehicle Maintenance and Repair
- Spill Response, Containment, and Recovery
- Recycling
- BMP Maintenance
- Other: \_\_\_\_\_

### TRAINING MATERIALS USED

(Please check all that apply.)

- Agricultural Water Quality Best Management Practices (BMPs) document
- AWM Stormwater Training "Only Rain in the Storm Drain" document
- UCCE Agricultural Water Quality Continuing Education Course Ch. 1 – 4.
- Other \_\_\_\_\_

The following operators, employees, and/or workers with responsibility for activities that may affect water quality have received stormwater training as specified above.

NAME	SIGNATURE	JOB ASSIGNMENT	DATE OF TRAINING
1.			
2.			
3.			
4.			
5.			

NAME	SIGNATURE	JOB ASSIGNMENT	DATE OF TRAINING
6.			
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15.			

Maintain this training record at the business site and provide it upon request of the County of San Diego authorized enforcement official.

When requested, submit training records by any of the following methods:

Return in person or mail to:

Agricultural Water Quality Program  
Department of Agriculture, Weights and Measures  
County of San Diego  
9325 Hazard Way STE 100  
San Diego, CA 92123

Fax to:

Attention: Ag Water Quality  
Program 858-467-9273

E-mail to your inspector at: [AWQ.AWM@sdcounty.ca.gov](mailto:AWQ.AWM@sdcounty.ca.gov)