STORMWATER PROTECTION PLAN

Equine Facilities

Background

Stormwater runoff is generated from various land uses and discharges into watercourses, which in turn flow into the San Francisco Bay.

Businesses in Alameda County, including equine facilities such as horse boarding and/or riding academy, must ensure that their processes like handling, storage and disposal of materials and wastes do not pollute stormwater that flows into the storm drain system or surrounding land and waters.

This Stormwater Protection Plan guides an equine facility owner/operator in planning how to prevent pollution of our waters. By completing your Stormwater Protection Plan, you will identify potential sources of pollution at your facility that may affect stormwater runoff quality and determine Best Management Practices (BMPs) that you will put in place to prevent stormwater pollution.

The Alameda County's Site Development Review application process requires an owner/operator of a horse boarding and/or riding academy to submit a complete Stormwater Protection Plan. Once submitted, the Stormwater Protection Plan will be reviewed by County staff as part of the Site Development Review.

Getting Started

How to complete your Stormwater Protection Plan:

- Place a check mark ☑ on each item below after you have completed the action.
- Complete ALL items including providing all required information and submittals.
- Contact the Clean Water Program at 510-567-6702 for any questions in completing your Stormwater Protection Plan.

☐ **1.** Submit a **Site Map** showing the following:

☐ a. Required content under Project Area Plan in A. General Content of Plans of the Site Development Review Application for Horse Boarding and/ or Riding Academy from the Alameda County Planning Department

- ☐ b. Horse areas e.g., paddocks, arenas, pastures, wash racks, etc.
- ☐ c. Drainage and water ways e.g., roof downspouts, storm drains, ditches/channels/culverts, creeks, ponds

> Keep a setback of 150 feet from creek banks or any water body for structures, horse and storage areas.
>
> Keep any pollution sources downgradient from drainage and water ways.

☐ **2.** Ensure your facility is **in compliance**.

- ☐ a. Any and all violations identified in the last Clean Water Program inspection report for your facility have been corrected.
- ☐ b. Not applicable – New facility

☐ **3.** Provide information about your facility.

- ☐ a. Facility Name and Address

_____

- ☐ b. Facility Owner/Operator Name and Contact Information (address, phone number, email)

_____

- ☐ c. Property Owner Name and Contact Information (address, phone number, email)

_____

Manure Storage and Disposal

☐ **1.** _____ Number of manure storage areas (MSA) at your facility

☐ **2.** Determine the total volume of horse manure generated at your facility.

- ☐ a. If manure is NOT mixed with wet bedding or shavings, calculate the following:

  _____ $Total\ number\ of\ horses \times 0.8\ cubic\ feet =$
  _____ $Total\ volume\ of\ manure\ generated\ per\ day$

- ☐ b. If manure is mixed with wet bedding or shavings, calculate the following:

  _____ $Total\ number\ of\ horses \times 3\ cubic\ feet =$
  _____ $Total\ volume\ of\ manure\ generated\ per\ day$

☐ c. Using the dimensions of your MSA, calculate the following in feet:

$$\_\_\_\_Length \times \_\_\_\_Width \times \_\_\_\_ Height = \_\_\_\_Total\ volume\ of\ MSA$$

☐ d. Finally, calculate the MAXIMUM number of days manure is allowed to be stored before manure is required to be removed:

$$Result\ from\ c.\ above\ divided\ by\ the\ Result\ from\ a.\ or\ b.\ above =$$

$$\_\_\_\_MAXIMUM\ storage\ time\ of\ manure\ at\ each\ MSA\ in\ days$$

> If you have more than one (1) MSA at your facility, perform calculations a through d for each MSA.
>
> Attach additional pages to your Stormwater Protection Plan as needed.

☐ **3.** Describe each MSA at your facility including the following information (attach additional pages to your Stormwater Protection Plan as needed):

☐ a. All MSAs and its distances from any storm drain, drainage ways, water bodies e.g., creeks, are shown on the facility Site Map.

- ☐ The MSA(s) are located on a flat area.
- ☐ Describe your run-on and run-off controls for your MSA to prevent pollution. For example, diverting drainage away from MSA, maintaining vegetation filter strip between MSA and drainage ways or collecting drainage from MSA.

_____

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_____

☐ b. All MSAs have roofs or cover. Describe how each MSA is protected from weather (rain, wind, etc.):

_____

_____

☐ c. All MSAs have walls and/or doors on each side that prevent manure from migrating off site i.e., no holes, gaps, etc.

☐ d. All MSAs have impervious floors i.e., liquid cannot pass through, such as made of concrete or asphalt.

- ☐ If the floor is not impervious, describe how you will protect the underlying soil and groundwater from your MSA.

_____

_____

_____

☐ ▪ Type of soil underneath your MSA(s) e.g., sandy, clay, etc. _____

☐ ▪ Depth to groundwater in feet _____

☐ e. Provide a backup plan when the MSAs are not accessible e.g., due to weather.

_____

_____

_____

☐ **4.** Manure is hauled away for disposal outside the facility.

☐ a. Provide the name, address and phone number of your **hauler**:

_____

☐ b. Provide the name, address and phone number of your **disposal site**:

_____

☐ c. Keep a copy of your agreement with the hauler(s) and disposal site(s), hauling and disposal receipts and provide upon request during inspection.

☐ d. Provide a backup plan if your hauler and/or disposal site is not available.

_____

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☐ **5.** Manure composted at the facility.

☐ a. If you are **composting**, provide documentation that the composting at the facility, is approved by Alameda County Department of Environmental Health's (ACDEH) Solid Waste Program, the local enforcement agency, and complies with Title 14 of the California Code of Regulations Chapter 3.1. Compostable Materials Handling Operations and Facilities Regulatory Requirements.

☐ b. Show the composting area on your Site Map.

☐ c. Provide the name, address and phone number of your **compost receiving site**:

_____

☐ d. Provide a backup plan if your MSA is full before composting is complete and your compost receiving site is not available.

_____

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☐ **6.** Manure or compost is applied to land.

☐ a. Provide the name and address of the owner of the land where manure/compost is applied/spread. If not the same as business/facility owner, provide agreement on land use.

_____

☐ b. The area(s) where manure/compost is spread and its distance to drainage and water ways are shown on the facility Site Map.

☐ c. Describe how you will prevent runoff, erosion, groundwater infiltration, migration and pollution during **land application** including the following information:

- ☐ Land application will occur on a flat area.
- ☐ Type of soil e.g., sandy, clay, etc. _____
- ☐ Depth to groundwater in feet _____
- ☐ Types of vegetation present on the land _____
- ☐ Maximum of 2 horses per 10 acres of land to spread on. How many acres will be used for land application?

  _____
- ☐ Soil and manure test results for soil nutrient management
- ☐ Method and equipment used for land application

_____

_____

- ☐ Spread at 1-inch thickness.
- ☐ Incorporate manure into soil thoroughly.
- ☐ Maintain a minimum height of 4 inches of grass/vegetation to protect soil from erosion and maintain plant vigor.
- ☐ Land application only performed from April to October.
- ☐ Show the different areas on your Site Map where land application is rotated annually.

Helpful Resources:

Horse Keeping: A Guide to Land Management for Clean Water. 2001.
Council of Bay Area Resource Conservation Districts, Petaluma, California. Available online at https://acrcd.org/horse-keeping-guide/

Land Application of Manure for Beneficial Reuse.
National Center for Manure & Animal Waste Management. Available online at https://www.ars.usda.gov/ARSUserFiles/66120900/SoilManagementAndCarbonSequestration/2001ajfB02.pdf

☐ d. Provide a backup plan if your MSA is full before manure can be spread on land.

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Horse Areas

☐ **1.** All horse areas and its distances from drainage and water ways are shown on your Site Map.

☐ **2.** For each horse area such as **stable, paddock, arena, turnout**, etc., provide the following information:

☐ a. Covered/under a roof

☐ b. Describe how rain/stormwater/surface water/drainage are diverted away from the horse areas. For example, roof downspouts, covered diversion channels, etc.

_____

_____

_____

☐ c. How often is the horse area cleaned? _____

☐ d. How is the wash water disposed?

_____

☐ e. Describe prevention measures for wastes e.g., bedding, manure, urine, dust, etc. from migrating from horse areas. For example, paved, kickboards, vegetation filter strips, etc.

_____

_____

_____

☐ **3. Wash rack/area**

☐ a. Covered/under a roof

☐ b. Wash area floors are impervious i.e., liquid cannot pass through, such as made of concrete or asphalt.

☐ ▪ If the floor is not impervious, describe how you will protect the underlying soil and groundwater from wastewater.

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☐ ▪ Type of soil underneath your wash rack/area e.g., sandy, clay, etc.

_____

☐ ▪ Depth to groundwater in feet

_____

☐ c. Plumbed to sewer or septic system. If using a septic system, provide approval from ACDEH's Onsite Wastewater Treatment Systems (OWTS) Program.

☐ d. Describe how rain/stormwater/surface water/drainage are diverted away from the horse wash areas. For example, roof downspouts, covered diversion channels, etc.

_____

_____

_____

☐ e. Describe prevention measures for wastewater from migrating from horse wash areas. For example, vegetation filter strips, etc.

_____

_____

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☐ **4. Pastures**

- ☐ a. Maximum of 1 horse per 10 acres of pasture.
- ☐ b. Maintain a minimum height of 4 inches of grass/vegetation to protect soil from erosion and maintain plant vigor.
- ☐ c. Drainage and water ways e.g., creeks, ponds, etc. are fenced off from horses and alternative source of drinking water is provided.
- ☐ d. Describe other conservation measures e.g., rotational grazing, etc.

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Other Storage Areas and Equipment Maintenance

☐ **1.** All storage e.g., hay, bedding, fuel, chemicals, trash, etc., and equipment maintenance areas and its distances from drainage and water ways are shown on your Site Map.

☐ **2.** List chemicals and amounts stored/used at your facility (attach additional pages to your Stormwater Protection Plan as needed).

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_____

_____

☐ **3.** For each storage and equipment maintenance area, provide the following information

- ☐ a. Covered/under a roof
- ☐ b. Storage and equipment maintenance area floors are impervious i.e., liquid cannot pass through, such as made of concrete or asphalt.

- ☐ If the floor is not impervious, describe how you will protect the underlying soil and groundwater from spills/leaks.

  _____

  _____

  _____

- ☐ Type of soil underneath the storage/maintenance area e.g., sandy, clay, etc.

  _____

- ☐ Depth to groundwater in feet

  _____

☐ c. Readily accessible spill kit

☐ d. Describe how rain/stormwater/surface water/drainage are diverted away from the storage/equipment areas. For example, roof downspouts, covered diversion channels, etc.

_____

_____

_____

☐ e. Describe prevention measures for material from migrating/being released from storage/equipment areas. For example, solid walls/locking doors on all sides, spill mats/pans, etc.

_____

_____

_____

Water Quality

☐ **1.** All drainage and water ways are shown on your Site Map.

☐ **2.** Drainage systems are installed to direct clean storm/surface water away from pollution sources.

☐ **3.** How often are drainage systems cleaned? _____

☐ **4.** No pipes/conveyances discharging non-stormwater to water bodies.

- [ ] **5.** Collection system installed for surface wastewater e.g., lined pond.
- [ ] **6.** Tree and/or ground cover, native plants and vegetation in riparian and wetland areas or along streams, creeks and other water bodies
- [ ] **7.** Describe how you prevent dust, sediment, trash from roads and activity areas from entering water ways. For example, roads are paved, vegetation filter strips, etc.