

# Equine / Confined Livestock Facilities LandSmart® Ranch Water Quality Plan

Prepared for (facility name): \_\_\_\_\_

Prepared by: \_\_\_\_\_

Date: \_\_\_\_\_

Version: December 2024



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## **1. INTRODUCTION**

This LandSmart® Ranch Plan template, in conjunction with workshops/webinars and one-on-one assistance (as needed), is intended to guide you through the process of (1) inventorying property features such as stalls, paddocks, pastures, and manure management facilities, (2) documenting conservation practices that you currently use, and (3) helping you to select additional conservation practices, when necessary to protect water quality and other natural resources. The resulting plan is intended to be a working document to record your decisions and your progress. The plan will help you to identify locations where photo monitoring should be conducted to document your use of conservation practices. These photos along with records you keep can help you evaluate how various conservation practices work within your ranch and can be helpful in the future for demonstrating to others the steps you have taken to protect and improve natural resources. Lastly, the plan will provide you with an easy-to-reference summary of conservation practices that you use and that you intend to implement. The template has also been developed to be consistent with local permitting requirements, such as General Waste Discharge Requirements (WDRs), where those apply. Additional requirements specific to compliance with the San Francisco Bay Regional Water Quality Control Board's WDRs are included in Appendix D1- D3.

The LandSmart® Ranch Plan Template consists of several worksheets that you will complete, with information and/or directions provided at the top of each worksheet. Additional instructions may be provided based on your responses to some questions. You will be able to complete some of the worksheets quite easily. Other worksheets will take more time and will require you to do a field assessment or seek assistance from a resource professional such as your local RCD, rangeland manager, or cooperative extension.

The worksheets are designed for you to document what conservation practices you currently use and to help you identify which areas of your property could receive the most benefit from the implementation of additional conservation practices. Conservation practice tables are included in these worksheets and the tables are designed to help you plan the location and timing of additional practices you may want to implement.

This ranch plan template purposefully covers topics of interest to most equine facility managers and has been developed with a focus on water quality. You may have additional conservation and land management interests beyond water quality regulations. The LandSmart® Ranch Plan template is intended to help you with those interests as well. If you need assistance to meet your land management and conservation goals, whether or not the topic is covered in this ranch plan template, please do not hesitate to contact your local Resource Conservation District (RCD) office.

### **Contact Information**

Sonoma RCD <https://sonomarc.org/>

Gold Ridge RCD <http://www.goldridgercd.org/>

Napa County RCD <https://naparc.org/>

Mendocino County RCD <https://mcrdc.org/>



## **2. RANCH FACILITY**

<b><u>Ranch Facility Name</u></b>	
Name of Plan Preparer	
Preparer's Affiliation	
Preparer's Mailing Address	
City, State and Zip Code	
Email	
Phone	
Site Visit Date	

### **Ranch Facility Location**

County	
This plan covers (Indicate what portion of property)	
Assessor's Parcel Number(s)	
Township	
Range	
Latitude	
Longitude	
Watershed and Subwatershed (if known)	

### **Owner/Lessee (if different from Plan Preparer)**

Name(s)	
Mailing Address	
City, State and Zip Code	
Email(s)	
Phone(s)	

### **Ranch Manager (if different from above)**

Name(s)	
Mailing Address	
City, State and Zip Code	
Email(s)	
Phone(s)	

**Operations and Land Use**

<i>Land Use Activity</i>	<i>Area/Length</i>		<i>Notes</i>
Livestock type _____ # of animals _____		acres	<i>Confined area acreage</i>
Grazed/Rangeland*		acres	
Roads (paved and unpaved)		acres	
Other paved areas and buildings		sq feet	
Forest/Woodland/Chaparral		acres	
Open Space/Fallow/Undeveloped		acres	
Reservoir/Pond (footprint)		acres	
Stream/River/Creek/Riparian (USGS blue-line)		feet	
Stream/River/Creek/Riparian (non USGS blue-line)		feet	
Drainage Ditch/Canal		feet	
Other Farming Facilities		acres	
Other Land uses: Residential		acres	
<b>Total acres:</b>			

*\* If the property includes greater than 50 acres of grazed pasture, additional requirements apply. See Appendix D3 for details.*

**Off-site Conditions Outside of Landowner Control**

If there are any upslope and/or upstream land uses or conditions within the watershed that are out of your control that may influence your ability to effectively implement conservation practices to protect water quality on your property, please describe them below.

Describe as needed:





### **3. SUMMARY OF CONSERVATION PRACTICES**

**Table 3.1 Summary of Implementation Practices for Permit Compliance**

This table is a guideline as to where implementation practices are required in order to comply with the San Francisco Bay Region’s General Waste Discharge Requirements for Confined Animal Facilities, order No. R2-2016-0031 (“CAF General Permit”). It is the responsibility of the landowner to reflect on these practices, make decisions, and update this plan. Sonoma Resource Conservation District (SRCD) is a non-regulatory agency that does not mandate any of these actions.

- Each row in this table references one or more specific requirements of your permit.
- The full text of these requirements is in Order R2-2016-0031, WDR Attachment B: Ranch Water Quality Plan Minimum Requirements.
- A copy of that document is included in Appendix C in this plan.
- More information is available online at:  
[https://www.waterboards.ca.gov/sanfranciscobay/water\\_issues/programs/agriculture/CAF.html](https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/agriculture/CAF.html)

Some of these practices may qualify for cost-share funding through Natural Resource Conservation Service (NRCS) programs. These are specific program practices that may be accessed through your local NRCS Service Office. Common NRCS practices are listed in Appendix C. Cost-share funding for some practices may also be available through the SRCD. Contact information for both NRCS and SRCD are included in Appendix C.

Specific Requirement from WDR Permit Attachment B	Current Practices	Practices for Permit Compliance
A.1.a		
A.1.b		
A.1.c		
A.1.d		

Specific Requirement from WDR Permit Attachment B	Current Practices	Practices for Permit Compliance
A.1.e		
A.1.f		
A.2.a		
A.2.b		
A.2.c		
A.2.d		
A.2.e		
A.2.f		
A.2.g		
A.2.h		
A.3 (all)		
A.4 (all)		

**Table 3.2 Summary of Monitoring Practices for Permit Compliance**

Specific Requirement from WDR Permit Attachment B	Monitoring for Permit Compliance
<p>A.1.(a-e) A.2 (all)</p>	<ul style="list-style-type: none"> <li>• Complete Water Quality Monitoring for qualifying rain events</li> <li>• Complete Storm Event Preparation Form (Appendix D2) for qualifying rain events, and maintain archive of completed checklists for the last 5 years.</li> <li>• Complete Daily Inspection Form (Appendix D2), and maintain archive of completed checklists for the last 5 years.</li> <li>• Complete Photo Monitoring (Appendix D2) to include in Annual report (these photos should document that the ranch is prepared for the rainy season and that required practices have been implemented).</li> </ul>
<p>A.3 (all)</p>	<ul style="list-style-type: none"> <li>• Maintain Manure Tracking Manifest (see Appendix D1) and maintain records for the last 5 years.</li> </ul>



**Table 3.3 Summary of Recommended Practices**

<b>Specific Requirement from WDR Permit Attachment B</b>	<b>Optional Recommended Practices</b> To be implemented as needed and as resources are available. If water quality results are above threshold amounts beyond the first rain of the season, these practices may help to improve water quality.
A.1.a	
A.1.b	
A.1.c	
A.1.d	
A.1.e	
A.1.f	
A.2.a	
A.2.b	
A.2.c	
A.2.d	
A.2.e	
A.2.f	
A.2.g	
A.2.h	



**Table 3.4 Documentation of Implemented Practices**

By tracking changes in land use and implementation of conservation or beneficial management practices on your agricultural operation, any water quality changes that may occur due to implementing practices are documented. Be sure to document **where** and **when** the following practices are implemented on your property.

Practice Description	NRCS Practice Standard (if applicable)	Location	Date/s of implementation
Monitoring: <ul style="list-style-type: none"> <li>• Water Quality Monitoring</li> <li>• Storm Event Preparation Form</li> <li>• Daily Inspection Form</li> <li>• Photo Monitoring Form</li> <li>• Manure Tracking Manifest / Hauling Invoice</li> </ul>		Facility-wide	Ongoing
Implementation:			





## 4. PROPERTY DESCRIPTION

### **RANCH MAP SUMMARY**

Maps will be an important part of your LandSmart® Plan and will serve as an easy reference for you. Maps should be prepared on a topographic map, an aerial photograph, or a Google Earth image (minimum 1" = 1,000' or 1:12,000 scales). More than one map may be used to display the information needed to complete your plan. A more detailed map (scale of 1" = 500' or 1:6,000') may be needed to accurately depict stream channels, riparian corridors, or other small-scale features. Each map should have a legend and should clearly display the features that are identified in your plan.

You may already have maps of the property to meet the mapping needs identified below. In this case, you may wish to include (or reference) existing maps in your Ranch Plan and alleviate the need to prepare new maps.

If you need assistance with mapping, your local RCD staff is available to assist you.

These tables provide a summary of features mapped for inclusion in your Ranch Plan. Please indicate below which features are displayed on your Ranch Plan map(s) by checking the box on the left. To the extent feasible, maps and photos should be kept with the Ranch Plan. In any case, maps and photos should be readily available for reference.

*Mark X if  
mapped*

#### **Ranch Boundaries**

<input type="checkbox"/>	Property & plan boundaries. Notes:
<input type="checkbox"/>	Parcel boundaries. Notes:
<input type="checkbox"/>	Topography (contour lines). Notes:
<input type="checkbox"/>	Flood Zone Maps (20-year peak and 100-year peak). Notes:
<input type="checkbox"/>	Pastures with indication whether year-round or seasonal. Notes:
<input type="checkbox"/>	Areas under consideration for future pasture. Notes:
<input type="checkbox"/>	Non-livestock land uses. Notes:

Mark X if  
mapped

**Ranch Facilities** – Give each feature a name or number for easy reference

	Pens/Paddocks/Corrals. Notes: <i>Paddocks are distinguishable from pastures in that paddocks are smaller in size and are considered confinement areas with little to no vegetative cover.</i>
	Stalls. Notes:
	Arenas. Notes:
	Wash areas. Notes:
	Feeding area and feed storage. Notes:
	Equipment yards and/or staging areas. Notes:
	Water/shade sources for livestock. Notes:
	Manure Storage Areas. Notes:
	Areas for manure spreading (with associated buffer locations, if applicable). Notes:
	Composting area. Notes:
	Wells and/or Pumping Facilities. Notes: <i>(i.e. springs, spring boxes, etc. Label if for domestic, irrigation, or barn use)</i>

Mark X if  
mapped

**Soils, Erosion Control, Management & Structures** - Give each feature a name or number for easy reference

	Soil type(s) with erosion rating(s) (map from <a href="http://websoilsurvey.nrcs.usda.gov">http://websoilsurvey.nrcs.usda.gov</a> ) Notes:
	Drainage system (diversion ditches, storm drains, and underground outlets with inlets and outlets) <i>Make sure to indicate surface water flow direction.</i> Notes:
	Sediment/attenuation/energy dissipation basin(s). Notes:
	Vegetated buffer strips/filter strips. Notes:
	Erosion features on land associated with the ranch facility (i.e. gullies, rills, landslides, mudflows, rock falls). Notes:
	Other:

Mark X if  
mapped

**Waterways** - Give each feature a name or number and indicate flow direction

	Ephemeral Stream (flows only during and shortly after a storm). Notes:
	Seasonal/Intermittent Stream (flows for part of the year and generally stop flowing in the late spring). Notes:
	Year-Round Stream (generally flows year-round). Notes:
	Human-made Waterways (non-roadside ditches). Notes:
	Swale(s). Notes:
	Wetland Area(s). Notes:
	Reservoir/Pond/lake(s) (indicate pipe or open channel spillway location). Notes:
	Erosion features in waterways associated with the ranch facility and roads (i.e. streambank erosion, channel incision). Notes:

Mark X if  
mapped

**Roads** - Identify with a name and indicate if public, private and/or easements

	Surfaced (paved, gravel, etc.) roads. Notes:
	Unsurfaced (dirt, vegetated etc) roads. Notes:
	Abandoned (non-used) roads. Notes:
	Equine trails. Notes:
	Waterway crossings (indicate whether freespan bridge, culvert, ford, etc.). Notes:
	Roadside ditches. Notes:
	Road drainage structures (ditch relief culverts, waterbars, rolling dips, etc.) . Notes:
	Erosion features on land associated with roads (i.e. gullies, rills, landslides, mudflows, rock falls). Notes:
	Other:

Mark X if  
mapped

**Other areas to map** - Give each feature a name or number for easy reference

	Equipment storage areas. Notes:
	Agrichemical mixing and storage areas. Notes:
	Maintenance and repair locations. Notes:
	Refueling locations. Notes:
	Motor oil recycling. Notes:
	Fuel Storage. Notes:

Mark X if  
mapped

**Monitoring Photo-Points** - Give each point a number for easy reference

	Photo-points for management practice implementation. Notes:
	Photo-points of pre-rainy season pollution prevention measures. Notes:
	Photo-points to demonstrate conditions downstream of discharge points. Notes:
	Photo-points to track "areas to watch" – e.g. areas with erosion or invasive weeds that you want to track over time. Notes:

## MANURE STORAGE & NUTRIENT MANAGEMENT

**Background:** Although horse waste (manure, urine, and soiled bedding) are organic biodegradable materials, many of their biological and chemical properties can be detrimental to fish, insects, and other aquatic life if those wastes get into local waterbodies. Just as horse owners plan the input (feed) for horses, they need to plan for the output (manure). Horse facility owners should develop a waste management plan to ensure clean and safe facilities, protect creeks and groundwater, reduce odors, and insect breeding opportunities. Effective horse manure management helps protect water quality.

**Purpose:** Identify practices currently in use and that are intended for implementation to:

- ✓ Keep surface runoff (stormwater) away from manure storage areas; divert clean water away from manured areas in a non-erosive manner.
- ✓ Keep manure storage areas away from drainages and water bodies.
- ✓ Keep drainage from manure from percolating down into soil- especially in areas where groundwater protection is a priority.
- ✓ Cover manure.
- ✓ Make access to storage areas convenient, size them adequately, and have a contingency plan for when waste volume exceeds capacity.

### Manure Storage Areas

**M1.** Do you have a manure management plan or strategy? If yes, attach the plan or describe in the box below:

- Yes, attach plan or describe       No (*Consider practices #1 and 2 listed in List M1 below.*)

**Describe your manure management strategy:**

**M2.** What is the estimated volume\* (cubic feet) of manure produced onsite on a:

Daily basis: \_\_\_\_\_ cubic feet

Weekly basis: \_\_\_\_\_ cubic feet

Monthly basis: \_\_\_\_\_ cubic feet

*\*If you are unsure, please use the formula on the following page to estimate:*

**Formula for estimating manure production volume:**

*The average 1,000 lb horse produces 45 lbs of manure/day, or approximately 0.75 cubic feet/day.*

$$\begin{aligned} & \# \text{ of horses} \times 45 \text{ lbs/day/horse} \times 30 \text{ days/month} = \text{Pounds of manure/month} \\ & \# \text{ of horses} \times .75 \text{ cubic feet/day/horse} \times 30 \text{ days/month} / 27 \text{ cubic feet/cubic yard} = \text{Cubic} \\ & \qquad \qquad \qquad \text{yards/month} \end{aligned}$$

*For example: if you have 3 horses, 3 horses x 45 lbs/day/horse x 30 days/month = 4,050 lbs/month  
3 horses x 0.75 cubic feet/day/horse x 30 days = 67.5 cubic feet/month  
67.5 cubic feet/month / 27 cubic feet/cubic yard = 2.5 cubic yards/month*

**M3.** What is the estimated volume\*\* (cubic feet) of **bedding** used onsite on a:

Daily basis: \_\_\_\_\_ cubic feet

Weekly basis: \_\_\_\_\_ cubic feet

Monthly basis: \_\_\_\_\_ cubic feet

\*\* If you are unsure, please use the following formula to estimate:

**Formula for estimating volume of bedding used:**

*The average bedding usage is 1 cubic foot/day/horse.*

$$\# \text{ of horses} \times 1 \text{ cubic foot/day/horse} \times 30 \text{ days/month} / 27 \text{ cubic feet/cubic yard} = \text{Cubic yards/month}$$

*For example if you have 3 horses, 3 horses x 1 cubic foot/horse/day x 30 days/month = 90 cubic feet/month  
90 cubic feet/month / 27 cubic feet/cubic yard = 3.33 cubic yards/month*

**M4.** Add together your totals from M2 and M3 above. What is the total estimated volume (cubic feet) of waste generated (manure + bedding) on a:

Daily basis: \_\_\_\_\_ cubic feet

Weekly basis: \_\_\_\_\_ cubic feet

Monthly basis: \_\_\_\_\_ cubic feet

**Example Calculation:** *In the scenario above, the total waste generated for 3 horses is 2.5 cubic yards/month of manure + 3.3 cubic yards/month of bedding = 5.8 cubic yards/month of waste.*

**M5.** How frequently are the following areas cleaned?

**Stalls:** \_\_\_\_\_

**Paddocks/corrals and/or turnouts:** \_\_\_\_\_

**Arenas:** \_\_\_\_\_

**M6.** What is the capacity of your storage areas for manure and other livestock-related waste (such as bedding)? \_\_\_\_\_ cubic feet

**Describe as needed:**

**M7.** Based on the answers provided above, how many days, weeks, or months' worth of manure can the storage area contain? \_\_\_\_\_  days  weeks  months

**Describe as needed:**

**M8.** Do you or will you use sealed containers (dumpsters or steel container/drop box) to store your manure and spent bedding until they are hauled offsite?

Yes (*Please answer questions A-E below.*)

No (*Skip to question M9.*)

NA, manure is not hauled offsite (*Skip to question M9.*)

**A.** What type of containers? \_\_\_\_\_

**B.** What is the capacity? \_\_\_\_\_

**C.** How frequently are they emptied? \_\_\_\_\_

**D.** Who is the hauler/service provider? \_\_\_\_\_

\*Note: Copies of waste transfer manifests must be kept with your plan.

Example of manifest can be found in Appendix D1.

**E.** Is there all-weather access?

Yes

No

If you answered no to question E. above, describe your contingency plan for loss of access to your manure storage due to weather or other causes (such as when a hauler is unavailable).

**Describe as needed:**

**M9.** Do you or will you stockpile manure and spent bedding in a constructed storage area (manure bunker) or in open piles on the ground?

- Manure bunker
- Open piles (*Consider practice #1, listed in List M1 below.*)
- N/A - Not applicable to the facility

**A.** Please attach flood zone map. Are manure storage areas located on high ground, above likely flood levels?

- Yes, manure storage areas are located above likely flood levels.
- No, manure storage areas are located below likely flood levels (*Consider practice #2, listed in List M1 below OR describe adequate flood protection strategies below.*)

If manure storage is located on a flood zone, describe flood protection strategies here:

**B.** Describe the size (length, width, and height) and the capacity (cubic yards) of your manure storage area:

Length: \_\_\_\_\_ feet                      Width: \_\_\_\_\_ feet                      Height: \_\_\_\_\_ feet  
Capacity: \_\_\_\_\_ cubic yards

**C.** Is the storage area covered by a roof?

- Yes (*Answer questions a and b.*)                       No (*Answer questions c and d.*)

**a.** What are the roof dimensions?

Length: \_\_\_\_\_ feet                      Width: \_\_\_\_\_ feet                      Height: \_\_\_\_\_ feet

**b.** Does the roof drain water away from the storage area in a non-erosive manner?

- Yes                       No (*Consider practice # 3, 4 and 5 in List M1 below.*)

**c.** Is the temporary cover (tarp) available for use when the manure pile is saturated?

- Yes                       No (*Consider practice # 6 in List M1 below.*)                       N/A

**d.** Is the storage area located on an impervious (water can't drain through it) surface?

- Yes                       No (*Answer questions i-iii below.*)



- i. How deep is the water table under or near the pile? \_\_\_\_\_
- ii. What is the soil type and depth under or near the pile? \_\_\_\_\_
- iii. How will you ensure that pollutants will not leach downward into the soil and groundwater? (*Consider practice #1 in List M1 below.*)

**Describe your strategy:**

- D.** Is the surface runoff or runoff from slopes above storage area diverted around or drained away from the storage area in a non-erosive manner? (*Consider practice #5, listed in List M1 below.*)

**Describe as needed:**

- a. Where does this water drain? How does it get there (drainage, ditches, pipes, etc.)?

**Describe as needed:**

**M10.** What best describes the area where your manure is stored?

- |   |   |
|---|---|
| <input type="checkbox"/> Flat or nearly flat land (slope <3%) | <input type="checkbox"/> Moderately sloping (slope 8-10%) |
| <input type="checkbox"/> Slightly sloping (slope 3-5%)        | <input type="checkbox"/> Steep slope (>10%)               |

**M11.** Is there year-round (all weather) access to the storage area?

- Yes (*Answered in M8 above*)                       No
- Yes (*Please describe below.*)

**Describe as needed:**

If you answered no, describe your contingency plan for periods without access. Questions to consider: Where else can you store your waste? Do you have a backup hauling plan?

**Describe as needed:**

**M12.** Are any wells located on the property? If completing this plan for WDR compliance, a certification of backflow prevention must be attached.

- Yes, (Show well locations on property map and describe below)
- No.

**M13.** Is your manure storage area located near a well, drainage channel, spring, pond, creek, or other waterbody?

Yes, *(Please answer Questions A - C below.)*                       No.

**A.** How far is the nearest waterway/waterbody? \_\_\_\_\_ feet

**B.** Is there a vegetated (grass or other) filter strip between the storage area and the waterway/waterbody?

Yes                       No *(Consider practice # 7 in List M1 below.)*

In some places *(Consider practice # 7 in List M1 below.)*

**C.** Where do you take the manure/bedding when the storage area is emptied\*? \_\_\_\_\_

*\*Note: Copies of waste transfer manifests must be kept with your plan if waste is moved off-site.*

*See Appendix D1 for Manifest Tracking Template.*

**M14.** Please list other manure stockpiling/storage plans or strategies not identified above:

<b>Describe as needed:</b>
----------------------------

## List M1: Conservation Practices for Manure Management

The following list outlines a variety of management practices that are intended to protect water quality on confined animal facilities. Selection of practices must be done on a site-specific basis, and as such it is recommended that you choose practices with the intention to protect water quality while keeping in mind the unique circumstances of your facility. Implementation of all practices is not necessary or required. NRCS Practice Titles are provided for your reference.

For more information on NRCS Practice Titles, standard documents can be accessed here:

[https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/technical/cp/ncps/?cid=nrcs143\\_026849](https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/technical/cp/ncps/?cid=nrcs143_026849) or can be provided from your local NRCS or RCD office upon request.

### ***Description & NRCS Practice Number and Title (if applicable)***

1. Construct a manure bunker (covered, where practicable, to prevent stormwater contact)
2. Move manure storage areas to high ground outside of likely flood zone
3. Install roof gutters – NRCS Practice 558, Roof Runoff Structure
4. Install permanent vegetation at gutter outlet to reduce erosion – NRCS Practice 412, Grassed Waterway
5. Install rock at gutter outlet to reduce erosion - NRCS Practice 558, Roof Runoff Structure
6. Cover pile with tarp prior to and during storm events
7. Plant a vegetative filter strip – NRCS Practice 393, Filter Strip

**Nutrient and/or Compost Management**

**M15.** Do you spread, or plan to spread, manure on site?

- Yes *(Please answer Questions A-I below and consider practices # 2 and 5 listed in List M2 below.)*
- No *(Skip to M.16. Retain copies of manifests for waste transfer to outside facilities with your plan.)*

**A.** Will manure be spread raw or will it be aged/composted?

- Spread raw *(Consider Practice #3 in List M2 below.)*
- Aged/composted *(Answer questions a and b below.)*

**a.** Will this on-site composting occur on a containment facility that collects any leachate from the composting process?

- Yes
- No *(Consider practice # 3, listed in List M2 below.)*

**Describe as needed:**

**b.** Is your compost monitored to reach temperatures necessary to eliminate pathogens (131°F for a minimum of 3 days enclosed or 15 days if windrowed)?

- Yes
- No *(Consider practice # 4, listed in List M2 below.)*

**Describe as needed:**

**B.** Describe the location, frequency, and method of spreading. Include details on setbacks from any waterways or vegetative buffers present along waterway. *Note: General WDRs require a 100 ft setback from waterways or wells or a 35-foot wide vegetative buffer.*

**Describe spreading location, frequency, and methods:**

**C.** Is the manure being spread as fertilizer, a soil conditioner, or both? Please circle one.

**D.** Will the manure be disked and if so, when? During the wet season or under what conditions?

**Describe as needed:**

**E.** What equipment is available to do this work? \_\_\_\_\_

**F.** What type of vegetation is present where and when the manure is to be spread?

**Describe vegetation:**

G. How many years have you been spreading manure in the same location? \_\_\_\_\_

H. Have you taken soil samples to evaluate available levels of nutrients in your soil?

Yes     No (*Consider practice #5, listed in List M2 below.*)

I. Describe your contingency plan if your storage capacity is exceeded before manure can be spread:

**Describe:**

J. Is there a vegetative buffer strip or grass filter strip between the spreading area and drainage channels, wells, or water bodies to trap pollutants?

Yes     No (*Consider practice #6, listed in List M2 below.*)

**M16.** Do you apply nutrients/fertilizers other than manure/composted manure?

Yes (*List other sources and answer A - B below.*)  No

**List other nutrients/fertilizers used here:**

A. Is fertilizer amount and application timing prescribed based on crop needs, identified by inspection and/or testing?

Yes     No (*Consider practices # 1, listed in List M2 below.*)

B. Fertilizer(s) are applied and timed to reduce runoff and leaching.

Yes     No (*Consider practice # 2, listed in List M2 below.*)

**Describe inspection/testing used, timing of application, etc.:**

## List M2: Conservation Practices for Nutrient and/or Compost Management

The following list outlines a variety of management practices that are intended to protect water quality on confined animal facilities. Selection of practices must be done on a site-specific basis, and as such it is recommended that you choose practices with the intention to protect water quality while keeping in mind the unique circumstances of your facility. Implementation of all practices is not necessary or required. NRCS Practice Titles are provided for your reference.

For more information on NRCS Practice Titles, standard documents can be accessed here:

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### ***Description & NRCS Practice Number and Title (if applicable)***

1. Consult and follow UCCE crop requirements - NRCS Practice 590, Nutrient Management
2. Time fertilizer application to reduce runoff and leaching – NRCS Practice 590, Nutrient Management
3. Compost animal manure on a containment facility– NRCS Practice 317, Composting Facility
4. Monitor compost temperature - NRCS Practice 317, Composting Facility
5. Collect soil samples to assess available levels of soil nutrients - NRCS Practice 590, Nutrient Management
6. Plant a vegetative filter strip – NRCS Practice 393, Filter Strip

## PASTURE MANAGEMENT

**Background:** Pastures are areas where grass is grown for forage for livestock and maintained to prevent erosion. Protecting a pasture's soil and vegetative cover will help to maintain pasture productivity. Soil erosion usually occurs when vegetative cover is removed and soil is left unprotected during the winter months. Soil erosion in pastures is usually the result of poor grazing management. Over stocking a pasture and allowing livestock to graze forage down to bare ground is one of the fastest ways to destroy the pasture and soil resource. Livestock can be very disruptive to soil in other ways as well. If animals are allowed to graze during periods of irrigation or heavy rainfall they can compact the soil and destroy plant cover. Livestock trails can also cause the soil to erode. Especially, on steeper slopes where runoff water finds its way into the ruts that are formed by the animals. Areas along water courses such as streambanks are particularly susceptible to erosion caused by livestock, especially if alternate watering facilities are not adequate. Riparian areas are also prone to overuse by livestock seeking shade and riparian growth to browse on. If livestock are not well distributed over the pasture, the likelihood of overgrazing and the potential for soil erosion become greater.

**Purpose:** Identify practices currently in use and that are intended for implementation to:

- ✓ Maintain grass cover on pastures (can be dry grass at the end of the season) to protect soil from erosion and to maintain plant vigor.
- ✓ Limit livestock access to creeks and ponds when possible; provide other sources of drinking water.
- ✓ Provide extra protection in riparian areas to prevent erosion and over-use.
- ✓ Practice rotational grazing; divide up pastures and rotate livestock between areas to allow pastures to rest and recover.
- ✓ Keep livestock out of the pastures during wet months or when forage is no longer adequate.
- ✓ Develop water sources, shade structures, or other attractants to encourage livestock to remote portions of pastures.
- ✓ Manage weeds for pasture health and animal health.

*\* Note: Pastures are distinguishable from "paddocks/corrals" in that paddocks are smaller in size and are considered confinement areas with little to no vegetative cover.*

**PM1.** Do you have a dust management strategy?

Yes, describe below  No (*Consider practices # 1 through 4, listed in List PM1 below.*)

**Describe:**

**PM2.** Do you have a mud management strategy?

Yes, describe below  No (*Consider practices # 1 through 5, listed in List PM1 below.*)

**Describe:**

**PM3.** Do livestock graze in pastures located on your property?

*\*Note: if grazed pasture acreage is > 50 ac, please see Appendix D3 for details on additional requirements for General WDRs compliance, such as RDM estimates prior to rainy season.*

Yes (Please answer Question A below.)                       No (answer PM 5 and then skip to next section)

**A.** Do you have more than one pasture?

Yes (answer Question B below)     No (skip question B.)

**B.** Do you practice rotational grazing?

Yes  No (Consider practice # 1 in List PM1 below.)

**PM4.** Do you board livestock that is kept in pastures full-time that do not have access to stalls or a paddock?

Yes (Livestock has access to covered shelters.)     No

**PM5.** Does the livestock have direct, unlimited access to drainage ways, stream channels, or ponds?

Yes (Consider practices # 4 through 7 in List PM1 below.)                       No

**PM6.** Is the livestock moved from the pasture(s) when necessary to protect the pasture(s) from erosion and damage to grass (i.e. when the soil is saturated or when they have grazed it to 4 inches or lower.)?

Yes     No (Consider practices # 1 and 2 in List PM1 below.)

**PM7.** Please list any additional measures or practices you employ to protect your pastures from overgrazing and/or erosion. Provide detail on the frequency of monitoring/inspection and the items inspected (i.e. grass height, signs of erosion, etc.).

**Describe:**

***Please see the resource titled "Dryland Pasture for Horses" for more information on preventing overgrazing and erosion.***

**PM8.** Do you manage your pastures to limit or control weeds?

Yes     No (Consider practice # 11 in List PM1 below.)

**Describe:**



**PM9.** What type of shade is provided for livestock on pastures? How closely is it located to surface water? Is it the only shade available? (*Consider practice # 3, 4 and 5 in List PM1 below.*)

**Describe:**

**PM10.** What water sources are provided for livestock on pastures? How far are they located from surface water? Please indicate water sources on your facility map. (*Consider practices # 3, 4 and 5 in List PM1 below.*)

**Describe:**

**PM11.** Are pasture areas irrigated?

Yes (*Consider practices # 8, 9 and 10 in List PM1 below.*)

No

## List PM1: Conservation Practices for Pasture Management

The following list outlines a variety of management practices that are intended to protect water quality on confined animal facilities. Selection of practices must be done on a site-specific basis, and as such it is recommended that you choose practices with the intention to protect water quality while keeping in mind the unique circumstances of your facility. Implementation of all practices is not necessary or required. NRCS Practice Titles are provided for your reference.

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### ***Description & NRCS Practice Number and Title (if applicable)***

1. Divide pastures for rotational grazing – NRCS Practice 382, Fence
2. Provide a stable, non-eroding surface for areas frequently used by animals – NRCS Practice 561, Heavy Use Area Protection
3. Install walkways to change animal traffic patterns – NRCS Practice 575, Animal Trails and Walkways
4. Provide access to drinking water for livestock – NRCS Practice 614, Watering Facility
5. Provide additional water sources to animals to improve distribution – NRCS Practice 516, Livestock Pipeline
6. Install riparian fencing to limit animal access to waterways – NRCS Practice 382, Fence
7. Provide protection against stream erosion – NRCS Practice 391, Riparian Forest Buffer
8. Keep irrigation water use records – NRCS Practice 449, Irrigation Water Management
9. Replace leaky pipes - NRCS Practice 449, Irrigation Water Management
10. Obtain an evaluation of the existing irrigation protection system - NRCS Practice 449, Irrigation Water Management
11. Consult UC Cooperative Extension Pest Management guidelines

## STORMWATER DRAINAGE AND CONFINEMENT AREAS

**Background:** Rainwater flowing across the land, in channels, or pipes is called stormwater runoff. If stormwater runoff is allowed to erode soil from bare areas or run through manured areas, it becomes polluted and must not be allowed to enter a stream. High-use areas such as buildings, corrals, arenas, paddocks, turnout areas, manure storage areas, etc., are areas that must be managed to keep clean water from becoming polluted. Diverting fresh water around high-use areas will keep the “clean water clean” and minimize the runoff from these high-use areas. By keeping the size of high-use areas small, the volume of polluted water can be reduced. It is much easier to manage clean water than treat the water once it becomes polluted.

**Purpose:** Identify all current and proposed implementation practices on the facility that are intended to:

- ✓ Keep clean water clean.
- ✓ Avoid mixing clean water with polluted water or allowing water to run through confinement or manure storage areas.
- ✓ Convey stormwater drainage such that erosion and soil loss are prevented.

### Roof Drainage

\* Note there are approximately 7.5 gallons of water in a cubic foot. Therefore 100 square feet (10 feet x -10 feet) of impervious area, such as a roof, will capture and yield approximately 62.5 gallons of rainwater with each inch of rainfall. This statistic may prove helpful in evaluating your current runoff management from barn and stall roofs.

**SW1.** Do you have gutters and downspouts on all barn, stall, and paddock roofs?

- Yes  No (*Consider practice #1 in List SW1 below.*)

**SW2.** Do the downspouts tie into a drainage system that keeps the clean water away from contaminants such as manure, urine, or bare ground areas?

- Yes  No (*Consider practices # 2 and 3, listed in List SW1 below.*)

**SW3.** If you do not have gutters on every building, is the clean water kept out of the contaminated areas (areas with manure, urine, or bare ground)?

- Yes (*If so, describe how below.*)  No (*Consider practices # 1 and 4 listed in List SW1 below.*)

Describe as needed:

**Property Drainage**

**SW4.** Do you have drainage systems installed on your property?

- Yes *(Please indicate these systems on your site plan map.)*  No

**SW5.** Do you have a backup plan in case of system failure? Please explain.

- Yes  No

**Describe as needed:**

**SW6.** Do all of the drainage systems that carry contaminated water outlet into a filter area (i.e. vegetated area where water infiltrates or slows down)? Please explain below.

- Yes  No *(Consider practice #5 in List SW1 below.)*

**Describe as needed:**

**SW7.** Do you combine your clean and contaminated water into the same outlet area? Please explain.

Yes *(Consider practices #1-4 and 6-9 for additional BMPs to help keep clean water separated from contaminated water in List SW1 below.)*

- No

**Describe as needed:**

### **List SW1: Conservation Practices for Management of Stormwater Drainage**

The following list outlines a variety of management practices that are intended to protect water quality on confined animal facilities. Selection of practices must be done on a site-specific basis, and as such it is recommended that you choose practices with the intention to protect water quality while keeping in mind the unique circumstances of your facility. Implementation of all practices is not necessary or required. NRCS Practice Titles are provided for your reference.

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#### ***Description & NRCS Practice Number and Title (if applicable)***

1. Install roof gutters to capture clean stormwater – NRCS Practice 558, Roof Runoff Structure
2. Divert downspout water away from contaminated areas – NRCS Practice 362, Diversion
3. Tie downspouts into a drainage system – NRCS Practice 558, Roof Runoff Structure
4. Install a roof or cover to divert clean water from animal management areas – NRCS Practice 367, Roof and Covers
5. Plant a vegetative filter strip – NRCS Practice 393, Filter Strip
6. Berms are intact and protected from erosion
7. Uncovered confined areas are scraped cleaned prior to storms or otherwise protected from discharging waste or sediment
8. Animals are relocated from uncovered confined areas before and during storm events
9. Waste storage areas are covered, if applicable

**Confinement Areas**

**SW8.** Are livestock maintained in open air (unroofed/uncovered) areas such as paddocks, turnouts, corrals, pipe pens, arenas etc.?

Yes (Please answer A through F below, and consider practices #1, 6 and 7 in List SW2 below.)  No

A. How often are paddocks, corrals, arenas, etc. cleaned? \_\_\_\_\_

B. How are they cleaned? What equipment is used?

**Describe as needed:**

C. What is the approximate slope of the confinement areas?

**Describe as needed:**

D. Is there surface material applied to these areas?  Yes  No

What kind in each area?

**Describe as needed:**

E. Is there adequate drainage in these confinement areas, preventing water from puddling or ponding during and after storms?

Yes (Drainage is adequate.)

No (Consider practice # 2 in List SW2 below.)

F. Does water run through or into confinement areas from adjacent hillsides, adjacent roofs, or other adjacent water sources?

Yes (Please answer Questions 1-4 below.)

No

**Describe as needed:**

1. Can this excess water be diverted away from the confinement area in a non-erosive manner?

Yes. Describe how. (Consider practices # 2-4 in List SW2 below.)

No

**Describe as needed:**

2. Describe measures to prevent puddling or ponding of water in confinement areas.

**Describe as needed:**

3. Does water run off the confinement area?  Yes  No

4. Drainage to waterway(s): Does water from the confinement area drain to (a) drainage way(s), seasonal waterway(s), or year-round waterway(s)?

Yes (*Answer Questions i-iii below.*)                       No

<p><b>Name of waterway:</b> _____</p> <p><b>Select one:</b> <input type="checkbox"/> Seasonal                      <input type="checkbox"/> Year-round</p> <p><b>Name of additional waterway:</b> _____</p> <p><b>Select one:</b> <input type="checkbox"/> Seasonal                      <input type="checkbox"/> Year-round</p>
--

i. How far is the confinement area from the drainage way, creek stream, pond, or another waterbody? Does the drainage way contain fish or other sensitive aquatic species?

<b>Describe as needed:</b>
----------------------------

ii. Is there a grass filter strip between the confinement area and drainage way to trap manure and soil particles?

Yes (*Answer below and indicate on site map.*)

No (*Consider practice #3 in List SW2 below.*)

1. How wide is the filter strip? \_\_\_\_\_

2. What is the slope and vegetation condition in the filter strip?

<b>Describe as needed:</b>
----------------------------

iii. Describe measures to prevent manure and soil particles from confinement area from draining into waterways. (*Consider additional practices #5-8 in List SW2 below.*)

<b>Describe as needed:</b>
----------------------------

## **List SW2: Conservation Practices for Management of Confinement Areas**

The following list outlines a variety of management practices that are intended to protect water quality on confined animal facilities. Selection of practices must be done on a site-specific basis, and as such it is recommended that you choose practices with the intention to protect water quality while keeping in mind the unique circumstances of your facility. Implementation of all practices is not necessary or required. NRCS Practice Titles are provided for your reference.

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### ***Description & NRCS Practice Number and Title (if applicable)***

1. Install a roof or cover to divert clean water from animal management areas – NRCS Practice 367, Roof and Covers
2. Alter ground surface to improve drainage and prevent clean water from mixing with contaminated water – NRCS Practice 362, Diversion
3. Install a vegetated filter strip – NRCS Practice 393, Filter Strip
4. Install a vegetative filter waterway – NRCS Practice 412, Grassed Waterway
5. Berms are intact and protected from erosion
6. Uncovered confined areas are scraped cleaned prior to storms or otherwise protected from discharging waste or sediment
7. Animals are relocated from uncovered confined areas before and during storm events
8. Waste storage areas are covered, if applicable



## WASH WATER

**Background:** Wash water is the runoff from water used to clean livestock, areas and/or structures on a ranch. In addition to manure pollutants, wash water can also contain livestock medications, pesticides and other substances topically applied to the animals to treat and prevent health issues including hoof ailments, skin disorders, worms, and parasites. Runoff containing these substances should probably not be directed to a septic system, but sanitary sewers or properly designed filter strips could help.

**Purpose:** Identify all current and proposed implementation practices on the facility that are intended to:

- ✓ Keep clean water clean.
- ✓ Do not mix clean water with wastewater.
- ✓ Minimize the volume of wastewater produced.
- ✓ Drain wastewater into septic systems, sewer systems, or vegetated filter strips for treatment.
- ✓ Do not discharge wastewater directly into storm drains, drainages, creeks, ponds, etc.

### Livestock Areas

**WW1:** Do you have designated horse/livestock wash areas at your facility?

Yes (*Indicate on your facility map and answer Questions A-D below.*)

No (*skip to WW2*)

**A.** Is the wash area/facility located close enough to a drainage channel, creek, or pond that runoff enters a waterway rather than infiltrating down into the soil?

Yes, within \_\_\_\_\_ feet. (*Consider practice # 1 or # 3, listed in List WW1 below.*)

No

**B.** Does the wash area have a hard surface with a drain?  Yes  No

**C.** Where does the wash water drain?

**Describe:**

D. Is the wash water "treated" (discharged into a filter strip, settling pond, etc.) on site?

- Yes. (Describe below.)       No (Consider practices # 1-3, listed in List WW1 below.)

**Describe as needed:**

*\*Please make sure that the wash area, drainage, and filter strips are shown on your site plan.*

### **Stall Cleaning**

**WW2.** Do you have indoor stalls with solid flooring, not soil or other permeable surface material?

- Yes.       No

**Describe:**

A. Do you wash out your stalls with water containing soap or other chemicals?

- Yes (Consider practices # 1 and 2 listed in List WW1 below.)       No

B. How often and for what reasons is stall washing done?

**Describe:**

C. Where does wash water drain?

**Describe:**

D. What is the plan for treating dirty water? (Consider practices # 1 and 2 listed in List WW1 below.)

**Describe:**

**WW3.** List the approximate volume of wash water (horse washing and/or stall washout) generated per week. *To help you estimate, typical wash water used for horse washing is around 2.5 -5 gallons/horse.*

Gallons/week: \_\_\_\_\_

## List WW1: Conservation Practices for Management of Wash Water

The following list outlines a variety of management practices that are intended to protect water quality on confined animal facilities. Selection of practices must be done on a site-specific basis, and as such it is recommended that you choose practices with the intention to protect water quality while keeping in mind the unique circumstances of your facility. Implementation of all practices is not necessary or required. NRCS Practice Titles are provided for your reference.

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### ***Description & NRCS Practice Number and Title (if applicable)***

1. Install a vegetated filter strip – NRCS Practice 393, Filter Strip
2. Install a vegetative filter waterway – NRCS Practice 412, Grassed Waterway
3. Relocate animal wash area (if in a location with high water quality risk or a sufficient vegetated filter strip isn't feasible)
4. Consider using phosphate-free chemicals when washing or cleaning

## NATURAL WATERWAYS, NON-ROADSIDE DITCHES, AND SPILLWAYS

Waterways, channels and streams, swales, ditches, and riparian areas are sensitive to the activities and practices that take place on agricultural, forest, residential, and other kinds of land. These waterways may also act as a conduit for sediment and other pollutants, transporting these substances downstream. Healthy riparian zones provide a number of environmental benefits and may protect streambanks from erosion. Riparian areas also buffer waterways from the effects of potential nutrient, pesticide, pathogen, or sediment runoff.

**Purpose:** Describe the condition of natural stream channels, riparian areas, and human-made waterways (non-roadside ditches and pond/basin spillways) on the property, including the rate of bed and/or bank erosion, channel incision, and head-cutting as well as the condition of human-made structures in the channel. Describe the conservation practices currently being implemented to protect waterways from water quality degradation and get connected with potential practices to implement in the future.

*For the purpose of this assessment and compliance with San Francisco Bay Regional Water Quality Control Boards General Waste Discharge Requirements (WDRs), only waterways within confined livestock areas and/or grazed pastures are being assessed.*

**W1.** Select all types of waterways present on the property that are on or adjacent to the ranch facilities (Be sure to show all waterway locations on the property map.):

- Natural waterway/stream
- Non-roadside ditches and/or pond spillways
- No waterways on property - *skip this section.*

**W2.** Complete this inventory of waterways located within or adjacent to areas used for equine use and/or equine management on the property. *This includes any areas where animals may have access to creek channels, where discharge from confined areas or manure storage flow towards or into surface water, and surface waters within 100 feet of where manure is applied as fertilizer.*

Waterway Name (Labeled on Map)	Channel Top Width (ft) 0-10, 11-25, 26-50, 51-100, 101-200, 200+	Channel Condition Stable, incising, head cutting, widening, aggrading/bank slough	Riparian Corridor Width 0-10, 11-25, 26-50, 51-100, 101-200, 200+	Riparian Corridor Minimal, sparse vegetation, dense veg, overgrown

**W3.** Equine facilities are set back from waterways by the minimum distance required by Sonoma County’s Riparian Corridor Ordinance.

Zoning Maps are linked at the bottom of this webpage for county setbacks:

<https://permitsonoma.org/regulationsandinitiatives/ripariancorridors>

Yes     Some waterways

No, the Sonoma County Riparian Corridor Ordinance current zoning map indicates that there are no riparian corridors on this property. *Before undertaking any future development, consult the resource above to confirm that there is not a riparian corridor on the waterway on this property. (Consider practice #7, listed in List W1 below. )*

**Describe as needed:**

## Managing Erosion and Water Quality in Natural Waterways

**W4.** Riparian Areas have vegetative cover.

- All banks
- Some banks
- No Banks (*Consider practices # 3 and 4, listed in List W1 below.*)
- Not Applicable (*Explain below.*)

**Describe as needed:**

**W5.** The riparian canopy along natural waterways provides shade to on average 80% the waterway.

- Yes
- No (*Consider practices # 1 through 4, listed in List W1 below.*)

**Describe as needed:**

**W6.** Erosion sites along waterway banks are being treated and/or managed to restore and/or maintain natural channel function.

- All banks
- Some banks (*Consider practices # 1 - 6, listed in List W1 below*)
- No Banks (*Consider practices # 1 - 6, listed in List W1 below*)
- Not Applicable –no erosion is occurring

**Describe location(s) of erosion and method(s) of treatment:**

**W7.** Are you interested in enhancing native vegetation, or fish and wildlife habitat in natural waterways and riparian areas?

- Yes (*Please contact your local RCD for opportunities!*)
- Not at this time

## List W1: Conservation Practices to Reduce Erosion in Natural Waterways

The following list outlines a variety of management practices that are intended to protect water quality on confined animal facilities. Selection of practices must be done on a site-specific basis, and as such it is recommended that you choose practices with the intention to protect water quality while keeping in mind the unique circumstances of your facility. Implementation of all practices is not necessary or required. NRCS Practice Titles are provided for your reference.

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### ***Description & NRCS Practice Number and Title (if applicable)***

1. Consult a professional
2. Remove invasive riparian plants – NRCS Practice 643, Restoration & Management of Declining Habitats
3. Establish native riparian trees and shrubs – NRCS Practice 391, Riparian Forest Buffer
4. Establish native riparian grasses and forbs – NRCS Practice 390, Riparian Herbaceous Cover
5. Install a rock-lined basin to dissipate hydraulic energy – NRCS Practice 587, Structure for Water Control
6. Establish or move facilities away from the waterway

## **Managing Erosion and Water Quality in Non-Roadside Ditches**

**W8.** Ditch beds (banks) are stable (not sloughing, downcutting, or eroding).

- All ditches
- Some ditches (*Consider practices # 1 - 6, listed in List W2 below.*)
- No ditches (*Consider practices # 1 - 6, listed in List W2 below.*)
- Not Applicable – no ditches are on site.
- Unknown - inaccessible

**Describe as needed:**

### **List W2: Conservation Practices to Reduce Erosion and Manage Stability and Conveyance in Non-Roadside Ditches**

The following list outlines a variety of management practices that are intended to protect water quality on confined animal facilities. Selection of practices must be done on a site-specific basis, and as such it is recommended that you choose practices with the intention to protect water quality while keeping in mind the unique circumstances of your facility. Implementation of all practices is not necessary or required. NRCS Practice Titles are provided for your reference.

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#### ***Description & NRCS Practice Number and Title (if applicable)***

1. Consult a professional
2. Establish native grasses and forbs – NRCS Practice 390, Riparian Herbaceous Cover
3. Line an eroding swale or diversion ditch – NRCS Practice 468, Lined Waterway or Outlet
4. Install rock check structures to dissipate hydraulic energy – NRCS Practice 587, Structure for Water Control
5. Plant a vegetative filter waterway – NRCS Practice 412, Grassed Waterway



**Managing Erosion from On-Farm Pond/Basin Spillways**

**W9.** There is an on-farm pond or basin (including sediment and attenuation basins) on the ranch facility.

- Yes                       No *(If none, skip remaining questions in this section.)*

**Describe as needed:**

**W10.** Open channel spillways are stable (not eroding) and/or properly armored to prevent erosion.

- All Spillways  
 Some spillways *(Consider practices # 1 - 5, listed in List W3 below.)*  
 No spillways *(Consider practices # 1 - 5, listed in List W3 below.)*  
 Not Applicable, all spillways are piped.

**Describe as needed:**

**W11.** Piped and open channel spillways from on-farm ponds contain pond overflows.

- All Spillways  
 Some spillways  
 No spillways *(Consider practices # 6 and 7, listed in List W3 below.)*  
 Not Applicable, all spillways are open channels

**Describe as needed:**

**W12.** The alignments of both the piped and the open-channel spillway outlets are in line with the downstream waterway.

- All Spillways  
 Some spillways *(Consider practice # 8, listed in List W3 below.)*  
 No spillways *(Consider practice # 8, listed in List W3 below.)*  
 Not Applicable

**Describe as needed:**

**W13.** Spillways from the on-farm ponds, both piped and open channel, have energy dissipators prior to re-entering the downstream waterway.

- All Spillways
- Some spillways (*Consider practices # 5 and 6, listed in List W3 below.*)
- No spillways (*Consider practices # 5 and 6, listed in List W3 below.*)
- Not Applicable

**Describe as needed:**

### List W3: Conservation Practices to Manage Spillways

The following list outlines a variety of management practices that are intended to protect water quality on confined animal facilities. Selection of practices must be done on a site-specific basis, and as such it is recommended that you choose practices with the intention to protect water quality while keeping in mind the unique circumstances of your facility. Implementation of all practices is not necessary or required. NRCS Practice Titles are provided for your reference.

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#### ***Description & NRCS Practice Number and Title (if applicable)***

1. Consult a professional
2. Install a rock weir to control in-channel flow – NRCS Practice 410, Grade Stabilization Structure
3. Widen/enlarge the spillway – NRCS Practice 378, Pond
4. Stabilize the open channel spillway – NRCS Practice 378, Pond
5. Plant a vegetative filter waterway – NRCS Practice 412, Grassed Waterway
6. Install a rock-lined plunge basin – NRCS Practice 587, Structure for Water Control
7. Install bank protection at the spillway outlet – NRCS Practice 580, Streambank Protection
8. Realign the existing spillway with the downstream waterway – NRCS Practice 378, Pond

## ROADS, TRAILS, AND CROSSINGS (IF APPLICABLE)

**Background:** Roads, trails, and livestock crossings over waterways that drain toward waterways can be major contributors of sediment and other pollutants. Roads and trails must be safe to travel while having a minimal effect on waterways in the watershed. Practices to address erosion from roads and trails aim to reduce the concentration of flow from roads and trails, slowing the rate of water running off the land and discharging accumulated waters more frequently to areas away from waterways.

**Purpose:** To identify practices currently in use and intended for implementation to slow, spread, and sink runoff from the road and/or trail network.

### ROADS AND TRAILS ON THE PROPERTY

Please note that only roads and/or trails associated with equine use or management are being assessed here.

**R1.** Roads or riding trails on the property cross waterways.

- Yes *(Please map the locations. For unpaved roads or riding trails, complete the Road Data Form for each crossing. Make additional copies of the data form as needed.)*
- No *(You are done with this section; however, all roads and trails on a property associated with equine use should be mapped and their surface types, paved or unpaved, should be identified.)*

**R2.** All road or riding trails that potentially drain to a crossing, have treatments (e.g. rolling dip, water bar, outsloping, etc.) implemented to ensure that drainage does not directly enter the waterway?

- Yes

**R3.** Along unpaved roads, culverted stream crossings have low plug potential (i.e. adequate culvert size, installed at stream grade, and/or trash deflector installed).

- All culverted stream crossings
- Some culverted stream crossings *(Consider practices 4 & 10 in List R1.)*
- None *(Consider practices 4 & 10 in List R1.)*

**Describe as needed:**

**R4.** Along unpaved roads, all culverted stream crossings have low diversion potential (i.e. water prevented from diverting from natural channel/flow direction, if culvert is plugged or overtopped).

- All culverted stream crossings
- Some culverted stream crossings *(Consider practices 5 & 6 in List R1.)*
- None *(Consider practices 5 & 6 in List R1.)*

**Describe as needed:**

**Data Form R1. Road Stream Crossing Data Form**

Complete this data form **for each** location where roads or riding trail cross a waterway. Make a copy of the form, including treatment options if applicable, for each crossing. As applicable consider treatment options provided and complete Conservation Practice Tables R1 and R2.

ROAD DATA FORM (2017)			
<b>GENERAL</b>	Site #:	Date:	Map ID/name:
	Does the site look to be actively eroding? <input type="checkbox"/> Yes <input type="checkbox"/> No		Photo point(s)? <input type="checkbox"/> Yes <input type="checkbox"/> No (If yes, list Photo point ID/names)
	Is this section of road necessary and utilized? <input type="checkbox"/> Yes <input type="checkbox"/> No (If no see Road Closure (654) options in List R1 & R2)		Site type: (If not a Stream Crossing then skip to 'Road Drainage' section)
<b>STREAM CROSSING TYPE</b> (Check one)	<input type="checkbox"/> Bridge <input type="checkbox"/> Bottomless Arch or <input type="checkbox"/> Box. (If yes, skip to 'Road Drainage' section)	Culvert ( <input type="checkbox"/> round or <input type="checkbox"/> oval) (If yes, go to 'Culverted crossing info' section)	Wet Crossing ( <input type="checkbox"/> Ford, <input type="checkbox"/> Armored Fill, <input type="checkbox"/> Fill, or <input type="checkbox"/> Pulled crossing) (If yes, go to 'Wet crossing' section)
<b>Culverted Crossing info</b>	Trash deflector above inlet? <input type="checkbox"/> Yes <input type="checkbox"/> No (If no, see treatment options 3 or 4 in List R1)		Elbow present along length of culvert? <input type="checkbox"/> Yes <input type="checkbox"/> No (If yes, then do not install trash rack)
	Does the stream crossing have diversion potential? <input type="checkbox"/> Yes <input type="checkbox"/> No (If yes see treatment options 5 or 6 in List R1)		Is rust/silt line at inlet of culvert greater than half the diameter of the culvert? <input type="checkbox"/> Yes <input type="checkbox"/> No (If yes, see treatment options 9 - 13 in List R1)
	Is Inlet of culvert greater than 20% crushed or plugged? <input type="checkbox"/> Yes <input type="checkbox"/> No (If yes, see treatment options 9 - 10 in List R1)		Is culvert bottom rusted through or separated? <input type="checkbox"/> Yes <input type="checkbox"/> No (If yes, see treatment options 9 - 13 in List R1)
<b>Wet crossing info</b>	Is crossing dipped wide enough to keep flows within natural stream channel? <input type="checkbox"/> Yes <input type="checkbox"/> No (If no, see treatment option 11 or 13 in List R1)	Is crossing armor (native or placed) adequate to prevent fill material from eroding? <input type="checkbox"/> Yes <input type="checkbox"/> No (If no, see treatment options 7 or 11 in List R1)	
<b>ROAD DRAINAGE</b> (to site)	<b>Left road/avenue</b> length(s) draining to site (ft): (If > 150ft see treatments options 3 - 5 in List R2)		Road Surface (paved or unpaved):
	<b>Right road/avenue</b> length(s) draining to site (ft): (If > 150ft see treatments options 3 - 5 in List R2)		Road Surface (paved or unpaved):
Left road length ends at: (break in slope, rolling dip, waterbar)			
Right road length ends at: (break in slope, rolling dip, waterbar)			
<b>COMMENT ON SITE AND ASSOCIATED ROAD LENGTH(S):</b>			

## List R1: Treatment Options to Reduce Erosion and Manage Stability at Stream Crossings

The following list outlines a variety of management practices that are intended to protect water quality on confined animal facilities. Selection of practices must be done on a site-specific basis, and as such it is recommended that you choose practices with the intention to protect water quality while keeping in mind the unique circumstances of your facility. Implementation of all practices is not necessary or required. NRCS Practice Titles are provided for your reference.

For more information on NRCS Practice Titles, standard documents can be accessed here:

[https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/technical/cp/ncps/?cid=nrcs143\\_026849](https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/technical/cp/ncps/?cid=nrcs143_026849) or can be provided from your local NRCS or RCD office upon request.

### ***Description & NRCS Practice Number and Title (if applicable)***

1. No treatment at site
2. Consult a professional
3. Remove screen from culvert inlet\* - NRCS Practice 560, Access Road
4. Install trash deflector (See typical drawing 3) - NRCS Practice 560, Access Road
5. Construct critical dip (See typical drawing 1c) - NRCS Practice 560, Access Road
6. Install critical culvert - NRCS Practice 560, Access Road
7. Armor fill face (See typical drawing 1b, 4) - NRCS Practice 468, Lined Waterway or Outlet, and Practice 907, Rock Riprap
8. Armor below outlet of culvert (See typical drawing 1b) - NRCS Practice 468, Lined Waterway or Outlet, and Practice 907, Rock Riprap
9. Repair culvert - NRCS Practice 560, Access Road
10. Install or replace culvert (See typical drawing 2, 4) - NRCS Practice 560, Access Road
11. Construct armored-fill crossing\*\* (See typical drawings 5a, 5b, 6, 7) – NRCS Practice 578, Stream Crossing
12. Install bridge\*\* – NRCS Practice 578, Stream Crossing
13. Construct ford crossing\*\* (See typical drawing 5a) – NRCS Practice 578, Stream Crossing
14. Excavate soil to decommission crossing\*\* - NRCS Practice 654, Road Closure, or Practice 903, Earthfill

\*Only if no elbow exists along culvert length.

\*\*If the culverted stream crossing were converted to any one of these structures then that Practice would suffice the 'plug potential' and 'diversion potential' requirements stated in the WDR.

## **List R2: Treatment Options to Reduce Erosion from Road Surfaces**

The following list outlines a variety of management practices that are intended to protect water quality on confined animal facilities. Selection of practices must be done on a site-specific basis, and as such it is recommended that you choose practices with the intention to protect water quality while keeping in mind the unique circumstances of your facility. Implementation of all practices is not necessary or required. NRCS Practice Titles are provided for your reference.

For more information on NRCS Practice Titles, standard documents can be accessed here:

[https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/technical/cp/ncps/?cid=nrcs143\\_026849](https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/technical/cp/ncps/?cid=nrcs143_026849) or can be provided from your local NRCS or RCD office upon request.

### ***Description & NRCS Practice Number and Title (if applicable)***

1. No treatment at site
2. Consult a professional
3. Install/Replace ditch relief culvert – ensure that outlet is located in a stable location (See typical drawing 8) – NRCS Practice 560, Access Road
4. Construct rolling dips (See typical drawings 10, 11, 19a-c.) – NRCS Practice 560, Access Road  
OR
5. Construct water bars (See typical drawing 20) – NRCS Practice 560, Access Road
6. Construct cross road drains (See typical drawing 17) – NRCS Practice 654, Road Closure
7. De-compact road surface (See typical drawing 17) – NRCS Practice 654, Road Closure
8. Pave road (no typical drawing available, NRCS EQIP does not fund paving).
9. Outslope road & remove ditch (See typical drawings 9a-c) – NRCS Practice 560, Access Road
10. Outslope road & retain ditch – ensure that outlet is located in a stable location (See typical drawings 9a-c) – NRCS Practice 560, Access Road
11. Inslope road – ensure that ditch outlets to a stable location (See typical drawings 9a-c) – NRCS Practice 560, Access Road
12. Crown road (See typical drawings 9a-c) – NRCS Practice 560, Access Road
13. Cut/clean roadside ditch – NRCS Practice 560, Access Road
14. Rock armor roadside ditch – NRCS Practice 560, Access Road

## AGRICHEMICALS (IF APPLICABLE)

**Background:** Agrichemicals (organic and/or synthetic nutrients and/or pesticides, including herbicides and sulfur) that move from the site of application into surface water can affect water quality and negatively impact human, animal, and/or non-target organism health. Nutrient sources associated with agricultural production practices may include organic and inorganic fertilizers, biodegraded crop residues, and agricultural wastes (including grape pomace and waste directly generated by animals). Wind and water erosion of soil or aerial drift from agrichemical applications may contribute to pesticide movement away from the target area. Agrichemicals may enter surface waters during overland runoff and tile drainage either as water-soluble residuals or as particles adsorbed to sediments. Nutrients from these sources become pollutants when they are transported off-site into nearby streams and lakes or percolate in excessive amounts to groundwater. Nitrates and phosphates in surface water bodies contribute to eutrophication, whereby the increases in aquatic plants and algal blooms deplete dissolved oxygen in the water and impact aquatic organisms. It is less harmful to natural environments when agricultural operations are maintained without using lethal or detrimental concentrations of toxic and biostimulatory substances.

**Purpose:** To identify practices currently in use or intended for implementation to ensure agrichemicals (fertilizers, soil nutrients, compost, and pesticides) are stored, mixed, and applied in a manner consistent with all applicable regulations, including those required by the California Department of Pesticide Regulation (DPR) and the County Agricultural Commissioner, and in a manner that prevents excess agrichemicals from reaching surface and groundwater.

**A1.** Agrichemicals are stored properly (per the label) on-site.

Yes

No (*Consider practice # 1, listed in List A1 below.*)

Not Applicable - No agrichemicals are stored on-site. (*Skip this section.*)

**Describe as needed:**

**A2.** Agrichemical mixing, loading, and rinsing are conducted on a containment facility.

Yes

No (*Consider practices # 2 through 5, listed in List A1 below*)

No mixing, loading, or rinsing on-site.

**Describe as needed:**



**A3.** Agrichemicals not handled on a containment facility are mixed, loaded and rinsed away from aquatic habitat and wells.

Yes

No (*Consider practices # 2 - 5, listed in List A1 below.*)

NA

**Describe as needed:**

**A4.** Disposal of any agrichemicals is done according to manufacturer's instructions and federal, state, county, and local regulations.

Yes

No (*Consider practice # 5, listed in List A1 below.*)

#### **List A1: Conservation Practices for Agrichemical Storage, Preparation and Disposal**

The following list outlines a variety of management practices that are intended to protect water quality on confined animal facilities. Selection of practices must be done on a site-specific basis, and as such it is recommended that you choose practices with the intention to protect water quality while keeping in mind the unique circumstances of your facility. Implementation of all practices is not necessary or required. NRCS Practice Titles are provided for your reference.

For more information on NRCS Practice Titles, standard documents can be accessed here:

[https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/technical/cp/ncps/?cid=nrcs143\\_026849](https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/technical/cp/ncps/?cid=nrcs143_026849) or can be provided from your local NRCS or RCD office upon request.

#### ***Description & NRCS Practice Number and Title (if applicable)***

1. Consult a professional
2. Use an impervious containment pad for agrichemical handling – NRCS Practice 309, Agrichemical Handling Facility
3. Provide securable agrichemical handling – NRCS Practice 309, Agrichemical Handling Facility
4. Move agrichemical handling away from aquatic habitat and wells – NRCS Practice 590, Nutrient Management
5. Train employees on safe agrichemical handling – NRCS Practice 590, Nutrient Management

**Pest Management**

**P1.** The facility operates under a current Pesticide Use Permit filed with the County Agricultural Commissioner.

- Yes, provide Pesticide Use Permit # and attach a copy of permit to this Ranch Plan.
- No (*Consider practices # 1 and 2, listed in List P1 below.*)
- NA

**Describe as needed:**

**P2.** UC-IPM guidelines are followed if applicable. (<https://www2.ipm.ucanr.edu/What-is-IPM/>)

- Yes, indicate current practices below.
- Some guidelines are followed (*Explain below.*).
- Guidelines are not yet followed (*Consider practices # 3 through 5, listed in List P1 below.*)

**Describe as needed:**

**P3.** Alternative, non-chemical pest control methods are used when and where practical.

- Yes (*Indicate practices below.*)
- No (*Consider practice # 6 in List P1 below.*)

**Describe as needed:**

## List P1: Conservation Practices for Pest Management Practices

The following list outlines a variety of management practices that are intended to protect water quality on confined animal facilities. Selection of practices must be done on a site-specific basis, and as such it is recommended that you choose practices with the intention to protect water quality while keeping in mind the unique circumstances of your facility. Implementation of all practices is not necessary or required. NRCS Practice Titles are provided for your reference.

For more information on NRCS Practice Titles, standard documents can be accessed here:

[https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/technical/cp/ncps/?cid=nrcs143\\_026849](https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/technical/cp/ncps/?cid=nrcs143_026849) or can be provided from your local NRCS or RCD office upon request.

### ***Description & NRCS Practice Number and Title (if applicable)***

1. Consult a professional to develop an Integrated Pest Management Plan
2. Apply pesticides under a Pesticide Use Permit
3. UC-IPM: Scout for pests – NRCS Practice 595, Integrated Pest Management
4. UC-IPM: Maintain pest management records – NRCS Practice 595, Integrated Pest Management
5. UC-IPM: Use chemicals that are lowest risk to water quality – NRCS Practice 595, Integrated Pest Management
6. Install raptor roosts, owl boxes, and/or bat boxes – NRCS Practice 645, Upland Wildlife Habitat Management

## **5. ADDITIONAL GOALS, INTERESTS OR CONCERNS SPECIFIC TO YOUR RANCH**

Please describe any other natural resource-related goals, interests or concerns identified during the planning process but not otherwise noted in this plan.

Describe as needed:

## **6. PHOTO MONITORING**

**Purpose:** To describe the methods and protocols that will be used to carry out visual monitoring and site inspections, including: annual monitoring, wet-weather readiness inspections, and management practice monitoring and evaluation. Monitoring is conducted to document that sediment control practices outlined in the LandSmart® Plan are implemented, that the practices are effective and that they are properly maintained. Monitoring requirements specific for WDR compliance are included in Appendix D2.

Label on Map	Indicate area type (Stalls, pasture, manure management, etc).	Date	Photo Taken? Y or N	Condition (performing properly, needs maintenance, needs consultation)	Actions taken

## **7. COMPLETED WATER QUALITY PROJECTS/CONSERVATION PRACTICES (OPTIONAL)**

For WDR Compliance, this form can serve as your facility evaluation plan for identifying water quality concerns to be addressed.

List all past water quality concerns on the ranch/farm and describe the issue. Describe any previously implemented management practice(s) intended to fix the problem. This includes steps to plan or receive technical/financial assistance, actual implementation or management changes, and the maintenance of projects or ranch infrastructure (cleaning culverts, scraping corrals, weed removal, etc.). Evaluate if more work is needed to improve water quality for each listed concern. Attach any old photographs of the concern including work completed if available. Use additional sheets if needed.

<b>Water Quality Concern</b>		<b>Location (pasture/ field)</b>	<b>Conservation Practice(s) Completed (with NRCS Practice Names and Numbers, if applicable)</b>	<b>Maintenance Needs</b>	<b>Evaluation (Is more work needed?)</b>	<b>Photo Avail.?</b>
<b>#</b>	<b>Describe</b>					

## **Appendix A: Maps**

Map 1: Vicinity

Map 2: Floodplain Map

Map 3: Soils Map

Map 4: Property Map

Map 5: Roads and Drainage

Map 6: Recommended Practices Map

## Appendix B: Photo Plates



## **Appendix C: Resources and Fact Sheets**

Recommendations to include in this section:

- Summary of Facility Requirements for CAF Permit for Equine Facilities
- WDR Attachment B Ranch Water Quality Plans
- Common NRCS Practices for Equine Ranch Water Quality Plans
- Potential Funding Sources
- Phosphate-Free Products for the Horse Barn
- Photographic Monitoring for Equestrian Facilities
- Dryland Pasture for Horses

## **Appendix D1: WDR Requirements - Facility Documents**

Recommendations to include in this section:

- Manure Tracking Manifest (blank template)
- Annual Reporting Form (blank)
- Water Quality Monitoring Guidance
- Well backflow prevention documentation

Copies of the following documents must be maintained with the Ranch Water Quality Plan for regulatory compliance with General Waste Discharge Requirements, if applicable:

- Flood zone mapping for 20-year and 100-year peak flows
- Copy of Pesticide Use Permit
- Manure management plan

## **Appendix D2: WDR Requirements - Monitoring**

Recommended to include in this section:

- Visual Monitoring Form – Storm Event Preparedness
- Visual Monitoring Form – Daily Inspections
- Photo Monitoring Form