

LandSmart® for Equine/Confined Livestock Facilities Ranch Plan

Prepared for: _____

Prepared by: _____

Date: _____

Version: October 2022



Contents

1. Introduction 3

2. Ranch Facility 4

3. Summary Implementation Table 7

4. Property Description 9

 Ranch map summary 9

 Manure Storage & Nutrient Management 12

 Pasture Management 23

 Stormwater Drainage and Confinement Areas 27

 Wash Water 34

 Natural waterways, non-roadside ditches, and spillways 37

 Roads, Trails, and Crossings (If Applicable) 46

 Agrichemicals (If Applicable)..... 51

5. Photo monitoring..... 56

6. Additional Goals, Interests or Concerns 57

7. Completed Water Quality Projects/Conservation practices (Optional) 58

Appendices

- Appendix A: Maps
- Appendix B: Photo Plates
- Appendix C: Resources and Fact Sheets
- Appendix D1: WDR Requirements – Facility Documents
- Appendix D2: WDR Requirements – Monitoring
- Appendix D3: WDR Requirements – Grazing Pastures > 50 acres
- Appendix E: Glossary

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://mcrccd.org/>

[Facility Name] LandSmart® Plan

2. RANCH FACILITY

Ranch Facility Name			
Name of Plan Preparer		Site Visit Date:	
Preparer's Affiliation			
Mailing Address			
City, State & Zip Code			
Email		Phone:	Fax:

Ranch Facility Location

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

Owner/Lessee (if different from above)

Name(s)			
Mailing Address			
City, State & Zip Code		Phone (hm)	
Email		Phone (cell)	

Ranch Manager (if different from above)

Name(s)			
Mailing Address			
City, State & Zip Code		Phone (hm)	
Email		Phone (cell)	

Operations and Land Use

<i>Land Use Activity</i>	<i>Area/Length</i>		<i># of animals</i>	<i>Notes</i>
Livestock: [list type]_____		acres		<i>List confined area acreage for this group of animals.</i>
Livestock: [list type]_____		acres		
Livestock: [list type]_____		acres		
Grazed/Rangeland*		acres		<i>See note below, if over 50 ac of grazed pasture</i>
Roads (paved and unpaved)		feet		
Other paved areas and buildings		Acres		
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		acres		
Total acres:				

** 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 IMPLEMENTATION TABLE

By tracking changes in land use and implementation of conservation or beneficial management practices (BMPs) on your agricultural operation, any water quality changes that may occur due to implementing practices are documented. Use this table to track implementation of actions that you identified in the ranch plan sections that follow.

The following BMPs are separated into those required to be implemented in order to comply with the Waste Discharge Requirements (WDRs), if applicable, and those that are optional:

Required Practices

Plan Section	Practice	NRCS Practice Standard (if applicable)	Location (show on map)	Priority/Timeframe	Details/Notes

The following BMPs are optional for compliance with the WDRs but are recommended for improving site conditions or enhancing habitat.

Optional Recommendations

Plan Section	Practice	NRCS Practice Standard (if applicable)	Location	Priority/ Timeframe	Details/Notes

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.

This table provides 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	Boundaries	Notes
	Property & plan boundaries	
	Parcel boundaries	
	Topography (contour lines)	
	Flood Zone Maps (20-year peak and 100-year peak)	
	Pastures with indication whether year-round or seasonal	
	Areas under consideration for future pasture	
	Non-livestock land uses	
Ranch Facilities – Give each area/feature a name or number for easy reference.		
	Pens/Paddocks/Corrals Note: Paddocks are distinguishable from pastures in that paddocks are smaller in size and are considered confinement areas with little to no vegetative cover.	
	Stalls	
	Arenas	

[Facility Name] LandSmart® Plan

	Wash areas	
	Feeding area and feed storage	
	Equipment yards and/or staging areas	
	Water/shade sources for livestock	
	Manure Storage Areas	
	Areas for manure spreading (with associated buffer locations, if applicable)	
	Composting area	
	Wells and/or Pumping Facilities (i.e. springs, spring boxes, etc.)(label if for domestic, irrigation, or barn use)	
Soils, Erosion Control, Management & Structures – Give each area/feature a name or number for easy reference.		
	Soil type(s) with erosion rating(s) (map from http://websoilsurvey.nrcs.usda.gov)	
	Drainage system (diversion ditches, storm drains, and underground outlets with inlets and outlets) <i>Make sure to indicate surface water flow direction.</i>	
	Sediment/attenuation/energy dissipation basin(s)	
	Vegetated buffer strips/filter strips	
	Erosion features on land associated w/ the ranch facility (i.e. gullies, rills, landslides, mudflows, rock falls)	
	Other:	
Waterways – Give each area/feature a name or number for easy reference. Indicate flow direction on map.		
	Ephemeral Stream (flows only during and shortly after a storm)	
	Seasonal/Intermittent Stream (flows for part of the year and generally stop flowing in the late spring)	
	Year-Round Stream (generally flows year-round)	
	Human-made Waterways (non-roadside ditches)	
	Swale(s)	
	Wetland Area(s)	
	Reservoir/Pond/lake(s) (indicate pipe or open channel spillway location)	
	Erosion features in waterways associated with the ranch facility and roads (i.e. streambank erosion, channel incision)	
Roads - Identify with a name and indicate if public, private and/or easements		
	Surfaced (paved, gravel, etc.) roads	

	Unsurfaced (dirt, vegetated etc) roads	
	Abandoned (non-used) roads	
	Equine trails	
	Waterway crossings (indicate whether freespan bridge, culvert, ford, etc.)	
	Roadside ditches	
	Road drainage structures (ditch relief culverts, waterbars, rolling dips, etc.)	
	Erosion features on land associated with roads (i.e. gullies, rills, landslides, mudflows, rock falls)	
	Other:	
Other areas to map – Give each area/feature a name or number for easy reference.		
	Equipment storage areas	
	Agrichemical mixing and storage areas	
	Maintenance and repair locations	
	Refueling locations	
	Motor oil recycling	
	Fuel Storage	
Monitoring Photo-Points – Select all that apply. Give each point a number for easy reference.		
	Photo-points for management practice implementation	
	Photo-points of pre-rainy season pollution prevention measures	
	Photo-points to demonstrate conditions downstream of discharge points	
	Photo-points to track “areas to watch” – e.g. areas with erosion or invasive weeds that you want to track over time	

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 Table M1 below.*)

Describe your manure management or strategy here:

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 following formula 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: _____

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 (*Circle one.*)

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 M10.*)

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 Table 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 table 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 table M1 below.*)

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

- Yes
- No (*Consider practice # 6 in table M1 below.*)

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 table M1 below.*)
Describe your strategy in the box below:

Describe how you will ensure pollutants will not contaminate soil and groundwater:

- 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 Table 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?

- Flat or nearly flat land (slope <3%)
- Moderately sloping (slope 8-10%)
- Slightly sloping (slope 3-5%)
- Steep slope (>10%)

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

- Yes (*Answered in M8 above*)
- Yes (*Please describe below.*)

Describe as needed:

No

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.

Describe how wellheads are protected and certification of backflow prevention, if applicable:

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 table 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:

Describe as needed:

Table M1: Conservation Practices for Manure Management

The following table 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 or can be provided from your local NRCS or RCD office upon request.

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

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 Table M2 below.)*
- No *(Retain copies of manifests for waste transfer to outside facilities with your farm plan.)*

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

- Spread raw *(Consider Practice #3 in Table 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 Table 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 Table 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? _____

D. Will the manure be disked? When? During the wet season or under what conditions?

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 Table M2 below.*)

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

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 Table M2 below.*)

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

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

List other nutrients/fertilizers used here:

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

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

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

Yes

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

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

Table M2: Conservation Practices for Nutrient and/or Compost Management

The following table 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_02684 or can be provided from your local NRCS or RCD office upon request.

<i>Practice</i>	<i>NRCS Practice Title</i>	<i>Implementation Date</i>	<i>Location (if applicable)</i>
1. Consult and follow UCCE crop requirements	Nutrient Management (590)		
2. Time fertilizer application to reduce runoff and leaching	Nutrient Management (590)		
3. Compost animal manure on a containment facility	Composting Facility (317)		
4. Monitor compost temperature	Composting Facility (317)		
5. Collect soil samples to assess available levels of soil nutrients	Nutrient Management (590)		
6. Plant a vegetative filter strip	Filter Strip (393)		

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 Table PM1 below.*)

Describe:

PM2. Do you have a mud management strategy?

Yes, describe below No (*Consider practices # 1 through 5, listed in Table 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

A. Do you have more than one pasture?

Yes (Do you practice rotational grazing? _____)

No (*Consider practice # 1 in Table 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 No

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

Yes (*Consider practices # 4 through 7 in Table 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 Table 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 Appendix D2 and D3 for details on additional visual requirements for General WDRs compliance.

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

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

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 Table 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 Table PM1 below.)*

Describe:

PM11. Are pasture areas irrigated?

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

No

Table PM1: Conservation Practices for Pasture Management

The following table 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_02684 or can be provided from your local NRCS or RCD office upon request.

<i>Practice</i>	<i>NRCS Practice Title</i>	<i>Practice Implementation Date</i>	<i>Location (if applicable)</i>
1. Divide pastures for rotational grazing	Fence (382)		
2. Provide a stable, non-eroding surface for areas frequently used by animals	Heavy Use Area Protection (561)		
3. Install walkways to change animal traffic patterns	Animal Trails and Walkways (575)		
4. Provide access to drinking water for livestock.	Watering Facility (614)		
5. Provide additional water sources to animals to improve distribution	Livestock Pipeline (516)		
6. Install riparian fencing to limit animal access to waterways	Fence (382)		
7. Provide protection against stream erosion	Riparian Forest Buffer (391)		
8. Keep irrigation water use records	Irrigation Water Management (449)		
9. Replace leaky pipes	Irrigation Water Management (449)		
10. Obtain an evaluation of the existing irrigation protection system	Irrigation System Evaluation (449)		
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 practices on the facility that are intended for implementation 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 Table 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 Table 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 Table 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 Table SW1 below.)*

Describe as needed:

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

- Yes No *(Consider practices #1-4 and 6-9 for additional BMPs to help keep clean water separated from contaminated water in Table SW1 below.)*

Describe as needed:

Table SW1: Conservation Practices for Management of Stormwater Drainage

The following table 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 or can be provided from your local NRCS or RCD office upon request.

<i>Practice</i>	<i>NRCS Practice Title</i>	<i>Practice Implementation Date</i>	<i>Location (if applicable)</i>
1. Install roof gutters to capture clean stormwater	Roof Runoff Structure (558)		
2. Divert downspout water away from contaminated areas	Diversion (362)		
3. Tie downspouts into a drainage system	Roof Runoff Structure (558)		
4. Install a roof or cover to divert clean water from animal management areas	Roof and Covers (367)		
5. Plant a vegetative filter strip	Filter Strip (393)		
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 table SW2 below.*)

No

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

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

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

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, or does water puddle or pond during and after storms?

Yes (*Drainage is adequate.*)

No (*Consider practice # 2 in Table 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 Table 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 drain to (a) drainage way(s), seasonal waterway(s), or year-round waterway(s)?

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

Name of waterway: _____
Circle one: Seasonal / Year-round
Name of additional waterway: _____
Circle one: Seasonal / Year-round

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?

Describe as needed:

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 Table SW2 below.*)

1. How wide is the filter strip? _____
2. What is the slope and vegetation condition in the filter strip?

Describe as needed:

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

Describe as needed:

Table SW2: Conservation Practices for Management of Confinement Areas

The following table 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 or can be provided from your local NRCS or RCD office upon request.

<i>Practice</i>	<i>NRCS Practice Title</i>	<i>Practice Implementation Date</i>	<i>Location (if applicable)</i>
1. Install a roof or cover to divert clean water from animal management areas	Roof and Covers (367)		
2. Alter ground surface to improve drainage and prevent clean water from mixing with contaminated water	Diversion (362)		
3. Install a vegetated filter strip	Filter Strip (393)		
4. Install a vegetative filter waterway	Grassed Waterway (412)		
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 practices on the facility that are intended for implementation 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-F below.*) No

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 (How close? _____ feet) (*Consider practice # 1 or # 3, listed in Table WW1 below.*)

No

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

C. Where does the wash water drain?

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 Table WW1 below.)*

If wash water is treated in a filter strip, describe the soil, slope, and vegetation of the filter strip:

**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. Describe below. No

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

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

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

C. Where does wash water drain?

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

WW3. List the approximate volume of wash water (horse washing and/or stall washout) generated per day: _____ gallons

To help you estimate, typical wash water used for horse washing is around 2.5 -5 gallons/horse.

Table WW1: Conservation Practices for Management of Wash Water

The following table 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_02684 or can be provided from your local NRCS or RCD office upon request.

<i>Practice</i>	<i>NRCS Practice Title</i>	<i>Practice Implementation Date</i>	<i>Location (if applicable)</i>
1. Install a vegetated filter strip	Filter Strip (393)		
2. Install a grassed waterway	Grassed Waterway (412)		
3. Relocate animal wash area (if in a location with high water quality risk or a sufficient vegetated filter strip isn't feasible)			

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. See <https://permitsonoma.org/regulationsandinitiatives/ripariancorridors> Zoning Maps linked at bottom of page for county setbacks.

Yes Some waterways No *(Consider practice #7, listed in Table 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 Table 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 Table 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 Table W1 below*)
- No Banks (*Consider practices # 1 - 6, listed in Table 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

Table W1: Conservation Practices to Reduce Erosion in Natural Waterways

The following table 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 or can be provided from your local NRCS or RCD office upon request.

<i>Practice</i>	<i>NRCS Practice Title</i>	<i>Implementation Date</i>	<i>Location (if applicable)</i>
1. Consult a Professional			
2. Remove invasive riparian plants	Restoration & Management of Declining Habitats (643)		
3. Establish native riparian trees and shrubs	Riparian Forest Buffer (391)		
4. Establish native riparian grasses and forbs	Riparian Herbaceous Cover (390)		
5. Install a rock-lined basin to dissipate hydraulic energy	Structure for Water Control (587)		
6. Establish or move facilities away from the waterway			
Other:			

Managing Erosion and Water Quality in Non-Roadside Ditches

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

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

Describe as needed:

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

The following table 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 or can be provided from your local NRCS or RCD office upon request.

Practice	<i>NRCS Practice Title</i>	<i>Implementation Date</i>	<i>Location (if applicable)</i>
1. Consult a Professional			
2. Establish native grasses and forbs	Riparian Herbaceous Cover (390)		
3. Line an eroding swale or diversion ditch	Lined waterway or outlet		
4. Install rock check structures to dissipate hydraulic energy	Structure for Water Control		
5. Plant a vegetative filter waterway	Grassed Waterway		
Other:			

Managing Erosion from On-Farm Pond/Basin Spillways (Optional)

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 Table W3 below.)*
 No spillways *(Consider practices # 1 - 5, listed in Table 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 Table W3below.)*
 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 Table W3 below.*)
- No spillways (*Consider practice # 8, listed in Table 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 Table W3 below.*)
- No spillways (*Consider practices # 5 and 6, listed in Table W3 below.*)
- Not Applicable

Describe as needed:

Table W3: Conservation Practices to Manage Spillways

The following table 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 or can be provided from your local NRCS or RCD office upon request.

<i>Practice</i>	<i>NRCS Practice Title</i>	<i>Implementation Date</i>	<i>Location (if applicable)</i>
1. Consult a Professional			
2. Install a rock weir to control in-channel flow	Grad Stabilization Structure (410)		
3. Widen/enlarge the spillway	Pond		
4. Stabilize the open channel spillway	Pond		
5. Plant a vegetative filter waterway	Grassed Waterway (412)		
6. Install a rock-lined plunge basin	Structure for Water Control (587)		
7. Install bank protection at the spillway outlet	Streambank Protection (580)		
8. Realign the existing spillway with the downstream waterway	Pond		
Other:			

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. For all road or riding trail lengths that potentially drain to a crossing, have treatments (e.g. rolling dip, water bar, outsloping, etc.) been 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 Table R1.)*
- None *(Consider practices 4 & 10 in Table 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 Table R1.*)
- None (*Consider practices 5 & 6 in Table 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)				
GENERAL	Site #:	Date:	Map ID/name:	Site located up-stream of pond/reservoir? <input type="checkbox"/> Yes <input type="checkbox"/> No
	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 Table R1 & R2)		Site type: (If not a Stream Crossing then skip to 'Road Drainage' section)	
STREAM CROSSING TYPE (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)	
Culverted Crossing info	Trash deflector above inlet? <input type="checkbox"/> Yes <input type="checkbox"/> No (If no, see treatment options 3 or 4 in Table 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 Table 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 Table 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 Table R1)		Is culvert bottom rusted through or separated? <input type="checkbox"/> Yes <input type="checkbox"/> No (If yes, see treatment options 9 - 13 in Table R1)	
Wet crossing info	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 Table 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 Table R1)	
ROAD DRAINAGE (to site)	Left road/avenue length(s) draining to site (ft): (If > 150ft see treatments options 3 - 5 in Table R2)		Road Surface (paved or unpaved):	Left road length ends at: (break in slope, rolling dip, waterbar)
	Right road/avenue length(s) draining to site (ft): (If > 150ft see treatments options 3 - 5 in Table R2)		Road Surface (paved or unpaved):	Right road length ends at: (break in slope, rolling dip, waterbar)
COMMENT ON SITE AND ASSOCIATED ROAD LENGTH(S):				

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

The following table provides an assortment of management practices that are intended to protect water quality. Selection of practices must be done on a site-specific basis. NRCS Practice Titles are provided for your reference, and you may contact your local NRCS or RCD field office for technical or possible financial assistance.

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 or can be provided from your local NRCS or RCD office upon request.

Practices (at stream crossing)	NRCS Practice Title	Current Practice	Recommended Practice
The following practices may need to be implemented to meet WDR compliance.			
1. No treatment at site	--	<input type="checkbox"/>	--
2. Consult a Professional		<input type="checkbox"/>	<input type="checkbox"/>
3. Remove screen from culvert inlet*	Access Road (560)	<input type="checkbox"/>	<input type="checkbox"/>
4. Install trash deflector (See typical drawing 3)	Access Road (560)	<input type="checkbox"/>	<input type="checkbox"/>
5. Construct critical dip (See typical drawing 1c)	Access Road (560)	<input type="checkbox"/>	<input type="checkbox"/>
6. Install critical culvert	Access Road (560)	<input type="checkbox"/>	<input type="checkbox"/>
The following practices are additional treatments to improve road drainage, reduce road maintenance, and protect water quality.			
7. Armor fill face (See typical drawing 1b, 4)	Lined Waterway or Outlet (468) and Rock Riprap (907)	<input type="checkbox"/>	<input type="checkbox"/>
8. Armor below outlet of culvert (See typical drawing 1b)	Lined Waterway or Outlet (468) and Rock Riprap (907)	<input type="checkbox"/>	<input type="checkbox"/>
9. Repair culvert	Access Road (560)	<input type="checkbox"/>	<input type="checkbox"/>
10. Install or replace culvert (See typical drawing 2, 4)	Access Road (560)	<input type="checkbox"/>	<input type="checkbox"/>
11. Construct armored-fill crossing** (See typical drawings 5a, 5b, 6, 7)	Stream Crossing (578)	<input type="checkbox"/>	<input type="checkbox"/>
12. Install bridge**	Stream Crossing (578)	<input type="checkbox"/>	<input type="checkbox"/>
13. Construct ford crossing** (See typical drawing 5a)	Stream Crossing (578)	<input type="checkbox"/>	<input type="checkbox"/>
14. Excavate soil to decommission crossing**	Road Closure (654) or Earthfill (903)	<input type="checkbox"/>	<input type="checkbox"/>
15. Other		<input type="checkbox"/>	<input type="checkbox"/>
*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.			

Table R2: Treatment Options to Reduce Erosion from Road Surfaces

The following table provides an assortment of management practices that are intended to protect water quality. Selection of practices must be done on a site-specific basis. NRCS Practice Titles are provided for your reference, and you may contact your local NRCS or RCD field office for technical or possible financial assistance.

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 or can be provided from your local NRCS or RCD office upon request.

Practices <i>(along road or trail lengths draining to sites identified in far right column)</i>	NRCS Practice Title	Current Practice	Recommended Practice <i>(Note Site ID#)</i>
The following practices may need to be implemented to meet WDR compliance.			
1. No treatment at site	--	--	
2. Consult a Professional		<input type="checkbox"/>	<input type="checkbox"/>
3. Install/Replace ditch relief culvert – ensure that outlet is located in a stable location <i>(See typical drawing 8)</i>	Access Road (560)	<input type="checkbox"/>	<input type="checkbox"/>
4. Construct rolling dips <i>(See typical drawings 10, 11, 19a-c.)</i> OR	Access Road (560)	<input type="checkbox"/>	<input type="checkbox"/>
5. Construct water bars <i>(See typical drawing 20)</i>		<input type="checkbox"/>	<input type="checkbox"/>
6. Construct cross road drains <i>(See typical drawing 17)</i>	Road Closure (654)	<input type="checkbox"/>	<input type="checkbox"/>
7. De-compact road surface <i>(See typical drawing 17)</i>	Road Closure (654)	<input type="checkbox"/>	<input type="checkbox"/>
8. Pave road <i>(no typical drawing available, NRCS EQIP does not fund paving).</i>		<input type="checkbox"/>	<input type="checkbox"/>
The following practices are additional treatments to improve road or trail drainage, reduce maintenance, and protect water quality.			
9. Outslope road & remove ditch <i>(See typical drawings 9a-c)</i>	Access Road (560)	<input type="checkbox"/>	<input type="checkbox"/>
10. Outslope road & retain ditch – ensure that outlet is located in a stable location <i>(See typical drawings 9a-c)</i>	Access Road (560)	<input type="checkbox"/>	<input type="checkbox"/>
11. Inslope road – ensure that ditch outlets to a stable location <i>(See typical drawings 9a-c)</i>	Access Road (560)	<input type="checkbox"/>	<input type="checkbox"/>
12. Crown road <i>(See typical drawings 9a-c)</i>	Access Road (560)	<input type="checkbox"/>	<input type="checkbox"/>
13. Cut/clean roadside ditch	Access Road (560)	<input type="checkbox"/>	<input type="checkbox"/>
14. Rock armor roadside ditch	Access Road (560)	<input type="checkbox"/>	<input type="checkbox"/>
16. Other		<input type="checkbox"/>	<input type="checkbox"/>

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 Table 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 Table 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 Table A1 below.*)

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 Table A1 below.*)

Table A1: Conservation Practices for Agrichemical Storage, Preparation and Disposal

The following table 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_02684 or can be provided from your local NRCS or RCD office upon request.

<i>Practice</i>	<i>NRCS Practice Standard Title</i>	<i>Implementation Date</i>	<i>Location (if applicable)</i>
1. Consult a Professional			
2. Use an impervious containment pad for agrichemical handling	Agrichemical Handling Facility (309)		
3. Provide securable agrichemical handling	Agrichemical Handling Facility (309)		
4. Move agrichemical handling away from aquatic habitat and wells	Nutrient Management (590)		
5. Train employees on safe agrichemical handling	Nutrient Management (590)		
Other:			

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 Table P1 below.*)

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 Table 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 Table P1 below.*)

Describe as needed:

Table P1: Conservation Practices for Pest Management Practices

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_02684 or can be provided from your local NRCS or RCD office upon request.

<i>Practice</i>	<i>NRCS Practice Standard Title</i>	<i>Implementation Date</i>	<i>Location (if applicable)</i>
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	Integrated Pest Management (595)		
4. UC-IPM: Maintain pest management records	Integrated Pest Management (595)		
5. UC-IPM: Use chemicals that are lowest risk to water quality	Integrated Pest Management (595)		
6. Install raptor roosts, owl boxes, and/or bat boxes	Upland Wildlife Habitat Management		
Other:			

5. 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

6. ADDITIONAL GOALS, INTERESTS OR CONCERNS

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:

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.

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

Appendix A: Maps

Examples of maps:

Facility Map

Slope Map

Flood Map

Soils Map

Practices Map

Appendix B: Photo Plates

Appendix C: Resources and Fact Sheets

Appendix D1: WDR Requirements - Facility Documents

Copies of the following documents must be maintained with the ranch farm plan for regulatory compliance with General Waste Discharge Requirements, if applicable:

- Well backflow prevention certification
- Flood zone mapping for 20-year peak and 100-year peak flows
- Copy of Pesticide Use Permit *(if applicable)*
- Manure management plan *(if available)*
- Waste transfer manifests – *Example provided*
- Annual Reporting Form

Appendix D2: WDR Requirements - Monitoring

Water Quality Monitoring Handout from Water Board

Visual Monitoring Form – Daily Inspections Template

Visual Monitoring Form – Storm Event Preparedness Template

Appendix D3: WDR Requirements - Grazing Pastures > 50 acres

As a part of the General Order, if over 50 acres of grazed pasture, they need additional GMP and protocol & schedule of regular pasture inspections. Records must be kept onsite in case of inspection, etc.

Grazing Operation Inspection Form

Appendix E: Glossary- *separate document*