RANCH WATER QUALITY PLAN,

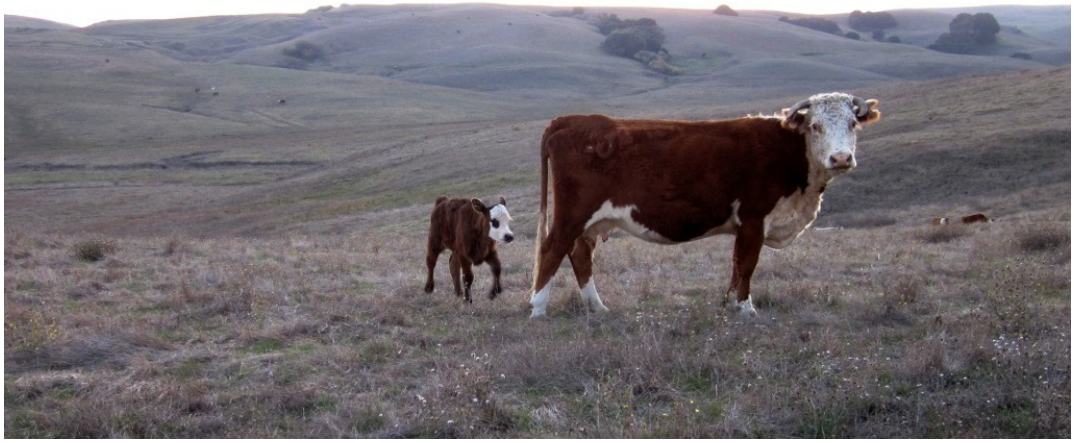
COMPLIANCE MONITORING &

ANNUAL CERTIFICATION

TEMPLATES

for

CONDITIONAL WAIVER OF WASTE DISCHARGE REQUIREMENTS FOR GRAZING OPERATIONS IN THE TOMALES BAY WATERSHED (TOMALES BAY, LAGUNITAS CREEK, WALKER CREEK AND OLEMA CREEK) IN THE CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD SAN FRANCISCO BAY REGION



October 10, 2018
(Updated by the Regional Water Board, October 10, 2018)

Contact: UC Cooperative Extension, Marin County (415) 473-4204

Websites: http://cemarin.ucanr.edu/

https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/agriculture/grazing/tomalesbay_grazing.html

Prepared by:	University of California Cooperative Extension
Updated by:	San Francisco Bay Regional Water Quality Control Board
In partnership with:	Marin Resources Conservation District
	USDA Natural Resources Conservation Service
	Marin Agricultural Land Trust
	Marin County Farm Bureau
	Western United Dairymen
	California Cattlemen's Association
	Marin Organic
	California Regional Water Quality Control Board
Adapted from:	University of California Cooperative Extension Rangeland Water Quality Short Course Planning Workbook 1997 http://californiarangeland.ucdavis.edu/rwqp_files/rwqp.htm
	USDA Conservation Planning Process https://www.nrcs.usda.gov/wps/portal/nrcs/detail/ca/technical/cp/?cid=nrcs144p2_064048
	Conditional Waiver for Grazing Operations in the Tomales Bay Watershed 2008 (renewed 2013 and 2018) https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/agriculture/grazing/tomalesbay_grazing.html
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BACKGROUND

This document provides the templates for the Ranch Water Quality Plan, Compliance Monitoring, and Annual Certification requirements of the San Francisco Bay California Regional Water Quality Control Board San Francisco Bay Region (Water Board) Resolution No. R2-2018-0046 or *Conditional Waiver of Waste Discharge Requirements for Grazing Operations in the Tomales Bay Watershed (Tomales Bay, Lagunitas Creek, Walker Creek and Olema Creek in the San Francisco Bay Region (Conditional Waiver)*. This resolution was approved by the San Francisco Bay Water Board on October 10, 2018 as part of the Water Board's implementation of the San Francisco Bay Basin Plan, specifically the Tomales Bay Pathogens and mercury total maximum daily loads (TMDLs), the Walker Creek mercury TMDL, and the Lagunitas Creek sediment TMDL.

The templates and supporting instructions were developed to assist and support ranchers and livestock agricultural managers in compliance with the regulatory requirements of the Conditional Waiver. They cover potential nonpoint source pollution concerns including nutrients and pathogens, sediment, mercury, and riparian or stream areas as required by the Conditional Waiver. Ranchers can use these templates to complete ranch water quality plans to be kept on-site. Additionally, the templates provide guidance for rancher completion of compliance monitoring and include a required annual certification form to be submitted on November 15 of each year to the San Francisco Bay Water Board.

The templates were adapted from earlier voluntary ranch water quality education and planning activities, including the University of California Cooperative Extension's Ranch Water Quality Planning Short Course. Additionally, these templates were informed by the Conservation Activity Plan framework of the United States Department of Agriculture Natural Resources Conservation Service. The result was first tested with ranching landowners in the Tomales Bay Watershed during 2009 where tools were developed to capitalize upon earlier ranch planning and completed water quality projects. Ranchers within the Tomales Bay Watershed can use these tools to conduct planning that will prioritize future projects and facilitate participation in technical or financial assistance programs.

USER INSTRUCTIONS

The following instructions provide direction for completing Ranch Plans, conducting Compliance Monitoring, and completing Annual Certification required by the Conditional Waiver. Completed Ranch Plans are to be filed on-site and available for review by the San Francisco Bay Water Board staff. Annual Certification is to be submitted by the landowner or tenant by November 15 of each year. Refer to these instructions in completing the forms on subsequent pages. Prior to filling out the forms make copies and keep one blank set as a master. It will be useful to have ranch maps available while completing the forms.

PROPERTY INFORMATION – **Page 9** (required & kept on-site)

- List ranch contact information.
- Describe where the property is located including specific parcels with Assessor Parcel Number(s) (APNs)
- Identify in which Water Board Region the ranch is. For Tomales Bay it is R2. If not sure refer to the map at http://www.waterboards.ca.gov/waterboards_map.shtml.
- List who owns and manages the land including any tenants.
- Identify other ranch plans that have been completed and that were used to complete or serve as the water quality plan.

RANCH/FARM GOALS – Page 10 (optional)
This is an optional form for listing short and long-term ranch goals for production, quality of life, and natural resource and water quality. Check the boxes that apply or write in additional goals for the ranch.

PASTURE INVENTORY – Page 11 (required & kept on-site)
This form is required and is intended to compile information that is useful to compare pasture stocking density. This form is also used to compare pasture and rangeland characteristics that inform RDM management and water quality planning decisions.

- List each agricultural production field used on the property for producing forage and/or grazing livestock using the ranches naming or number system.
- Provide basic field or pasture description.
- Document the general season of use, for example pasture used in winter from December through March or pasture used spring through fall (April through November).
- Using your soil map list the soil series number.
- Provide best estimate of pasture or field slope, acres, and woody vegetation cover.
- List the acreage of the pasture.
- List the number of animals put out on the pasture to graze.
- Calculate the stocking density of pasture by dividing the pasture size by the stock number.
- Provide an expectation of the minimum RDM objective for each pasture and rangeland unit based on slope, woody vegetation, and grassland type (annual vs. hardwood rangeland vs. coastal prairie) from Tables 1-3 in: https://anrcatalog.ucanr.edu/Details.aspx?itemNo=8092

PASTURE/RANCH ASSESSMENT – Page 12 (required and kept on-site)
The series of questions provide an exercise to explore sites of potential water quality concern. Use the assessment form to evaluate potential sediment, nutrient, and pathogen sources with the understanding that identifying a source does not in and of itself imply causation by management. While responding to these questions, make notes on the ranch maps (page 17) and on the tables on pages 14 and 15. These two

tables provide for documenting projects already completed and planning for additional projects to improve or maintain water quality. For more information, refer to http://anrcatalog.ucanr.edu/pdf/21626.pdf or http://anrcatalog.ucanr.edu/pdf/8014.pdf

- Answer "yes," "no," or "not sure" for each question.
- Where the response is "yes", briefly describe the location(s) and conditions /concerns.
- Additionally with a "yes" response make the best determination as to the cause, including historic, natural, or current management.

STREAM ASSESSMENT – Page 13 (required & kept on-site)
The series of questions provide an exercise to explore potential sites of water quality concern. Use the assessment form to evaluate stream conditions. While responding to these questions, make notes on the ranch maps (page 17) and on the tables on pages 14 and 15. These two tables provide for documenting projects already completed and planning for additional projects. For more information, refer to http://anrcatalog.ucanr.edu/pdf/8089LR.pdf

- Answer "yes," "no," or "not sure" for each question.
- Where the response is "yes", briefly describe the location(s) and conditions /concerns.
- Additionally with a "yes" response make the best determination as to the cause including historic, natural, or current management.

COMPLETED WATER QUALITY PROJECTS – Page 14 (optional)
This table documents actions already taken to improve or maintain water quality on the ranch. Use it to list all past water quality problem sites with evaluations of previous fixes and any ongoing maintenance and management. While completing the table it will be useful to make notes on the ranch map of identified projects.

- For each identified site label it with a number or name consistent with ranch records.
- Briefly describe the site and water quality concern.
- List in which pasture or field the site is located (refer to Pasture Inventory – Page 11).
- Document practices implemented or management taken to improve or maintain water quality. For common rangeland watershed improvement practices, refer to http://rangelandarchive.ucdavis.edu/ or http://www.waterboards.ca.gov/water_issues/programs/nps/encyclopedia/1_age.shtml.
- Identify any ongoing maintenance or management required.
- Provide assessment on the need for additional work.
- Indicate if photographs of the site and management practice construction and maintenance are available.

FUTURE WATER QUALITY PROJECTS – Page 15 (required & kept on-site)
This table is used to plan future water quality improvement or maintenance projects. List potential problem sites with evaluations of previous fixes, alternative options of future improvement practices with estimated costs and project priority. While

completing the table it will be useful to make notes on the ranch map of identified projects.

- For each identified site label it with a number or name consistent with ranch records.
- Briefly describe the water quality concern at the site and its cause.
- List in which pasture or field the site is located (refer to Pasture Inventory – Page 11).
- Make a list of potential practices to implement or management measures that could be taken to improve or maintain water quality. To guide the development and assessment of rangeland management and conservation practices, refer to http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/technical/nra/ceap/?&cid=stelprdb1045811
- Make an initial estimate of the cost and feasibility to implement the identified potential practices of management measures.
- Assign a priority to the site indicating relative to other sites in what order the site will be addressed. Assignment of a priority recognizes that management practice implementation is dependent upon availability of technical and financial assistance.
- List steps taken or planned to access technical and financial assistance or implement practices independent of such programs.

MAPPING RANCH/FARM FACILITIES AND RESOURCES – Page 16 (optional)
Use this guide and corresponding ranch maps to locate ranch roads, ponds, fences, completed water quality projects, future water quality projects, etc.

RANCH MAPS – Page 17 (required & kept on-site)
Insert copies of the completed ranch/farm map, soils map, or any other maps desired. The map scale should be 1:12,000 or better (finer resolution). Contact local Resource Conservation District, Natural Resources Conservation Service, or University of California Cooperative Extension offices for map needs.

PASTURE USE RECORDS – Page 18 (required & kept on-site)
Note how and when each pasture was utilized by livestock during the year.

COMPLIANCE MONITORING – Page 19 (required & kept on-site)
The compliance monitoring required by the San Francisco Bay Water Board is summarized including visual inspections, Residual Dry Matter (RDM), and photographs. Space is provided to record field observations made during inspections, RDM estimates/interpretation, and photo-point descriptions.

ANNUAL CERTIFICATION FORM – Page 20 (required & submitted)
Summarize the inspection monitoring and water quality fixes completed over the past year. Prior to November 15, mail it to San Francisco Bay Water Board at the address indicated on the bottom of the page. We suggest that you send it registered mail and retain the return receipt with a copy of the form in the Ranch Water Quality Plan. Also,

you may email a scanned or saved '.pdf' file to appropriate San Francisco Bay Water Board staff.

- Write the ranch/farm name, mailing address, and list all Assessor Parcel Number(s) (APNs) with livestock as identified in the Notice Of Intent (NOI) and Ranch Plan.
- Indicate if the Ranch Water Quality Plan is completed and the year of completion as well as when updates will be made. Alternatively, indicate that the plan is not yet completed and when it will be.
- List the dates when annual visual inspections were completed - five during the wet season monthly, two during the dry season with one in September, and one survey of streams above and below the ranch.
- Summarize RDM monitoring data and explain results below minimum objectives.
- Indicate if during the visual inspections further management practices and measures were needed to improve or maintain water quality.
- List any potential water quality concerns/problems identified during the inspections including the location, brief description and note management practices.
- Include name of contact person filing Annual Certification paperwork with the San Francisco Bay Water Board which may be landowner or tenant, phone/email, and signature. Copy page for files.

GLOSSARY – Page 21

LANDOWNER AND TENANT RESPONSIBILITIES

Sometimes entire ranches or specific pastures and fields within a ranch are being leased for grazing. In these situations, questions arise about the responsibilities and roles of the landowner and tenant to comply with the Conditional Waiver through completion of the ranch water quality plan, conducting compliance monitoring, and submitting annual certification. Ultimately, **the landowner is responsible for insuring that the Conditional Waiver regulatory requirements are met**. Who completes the ranch water quality plan, conducts yearly monitoring and submits annual certification is a decision the San Francisco Bay Water Board will leave to the landowner (lessor) and tenant (lessee). It is advised that both parties review the ranch plan and monitoring and annual certification forms on an annual basis.

PROPERTY INFORMATION (required and kept on-site)

Ranch/Farm Location	
Farm/Ranch Name:	
Mailing address or P.O. Box:	County:
City, State and Zip Code:	
Phone:	Size (acres):
RANCH LOCATED IN REGION 2 **SAN FRANCISCO BAY REGIONAL WATER QUALITY CONTROL BOARD**	
List all Assessor Parcel Numbers (APNs) or legal description (Township, Range, Sections) for each parcel, pasture, or silage field included in this plan:	

Owner	
Name(s):	
Mailing address or P.O. Box:	□ same as ranch address
City, State and Zip Code:	
Phone:	E-mail (optional):

Tenant/Manager (if not owner)	
Name(s):	
Mailing address or P.O. Box:	
City, State and Zip Code:	
Phone:	E-mail (optional):

Plans & Certifications			
Check the box for the plans, certifications or other documents that exist for the ranch:			
□ Conservation Easement Plan	□ Dairy Quality Assurance Program	□ Erosion Control Plan	□ Fire Mgmt. Plan
□ Fish Friendly Farming	□ Marin County Grass-Fed Certification	□ Grazing Mgmt. Plan	□ MALT Mgmt. Plan
□ Organic Certification	□ NRCS Conservation Plan	□ Dairy Nutrient Mgmt.	□ Salmon Safe Certification
□ Timber Harvest Plan	□ UCCE Ranch Plan	□ Dairy Waste Mgmt. Plan	□ Grass Fed Certification
□ Succession Plan			

RANCH/FARM GOALS (optional)

Dates Updated: _____

Ranch goals are divided into production, quality of life, and natural resource goals. These goals should reflect what you are trying to accomplish on your property. They are used to identify management strategies and practices for accomplishing your goals as well as to help you identify goals that might conflict with each other. Check any goal statements below that reflect your plans, reword them if needed, and/or write in your own. Consider prioritizing them in discussions with family and managers.

Production
☐ pass on the farm/ranch to the next generation
☐ reduce family/farm debt
☐ expand farm/ranch enterprises
☐ develop new enterprises
☐ increase farm/ranch profitability
☐ reduce operating costs
☐ purchase or lease more ranch/farm property
☐ other:
☐ other:
Quality of Life
☐ reduce energy consumption in the farm/ranch operation
☐ provide for our children's college education
☐ provide financial or other support for community organizations
☐ reduce household operating expenses
☐ build an emergency fund
☐ raise livestock or crops during retirement
☐ build a retirement fund
☐ other:
☐ other:
Natural Resources & Water Quality
☐ manage rangeland to protect soil from erosion
☐ manage cropland, pastureland or forestland to protect soil from erosion
☐ manage ranch roads to reduce movement of sediment into streams and other water bodies
☐ reduce erosion of streambanks and gullies
☐ manage to increase tree cover and/or ground cover in riparian areas or along streams
☐ reduce concentration of livestock in or near streams, wetlands, or other water bodies
☐ manage to reduce entry of sediment, nutrients and pathogens to streams or wetlands
☐ reduce wildfire hazard
☐ maintain or enhance oak woodland, native grass, or other plant communities
☐ maintain or enhance wildlife or fisheries habitat or other aquatic resources
☐ reduce/manage invasive weeds
☐ reduce/manage predator impacts on the ranching operation
☐ meet water quality regulations
☐ other:
☐ other:

PASTURE INVENTORY (optional)

Dates Updated: _____

Describe each pasture, paddock, and open rangeland on the ranch/farm with estimations of area, slope, and woody vegetation cover. Large or complex pastures may be subdivided into subsection units for management and/or mapping purposes. Look up the minimum objective for Residual Dry Matter (RDM) monitoring in Tables 1, 2, and 3 in *Guidelines for Residual Dry Matter (RDM) Management* (http://ucanr.edu/sites/UCCE_LR/files/180600.pdf) and note which table your use. Soil information is available online at http://casoilresource.lawr.ucdavis.edu/drupal/ and http://websoilsurvey.nrcs.usda.gov/app/.

Pasture/Field		Season(s) of Use	Soil Map Unit(s)	Size (acres)	Slope(s) (%)	Woody Vegetation Cover (%)	RDM Table Number	RDM Minimum (lbs/acre)
#	Name/ Location/							

PASTURE/RANCH ASSESSMENT (required and kept on-site)

Date(s) Updated: _____

The following questions are intended to help assess ranch/farm water quality and potential sources of pollution in the watershed. It is important to note that identified pollution sources **may not be caused by current livestock grazing activities**. This assessment is intended to be used on each pasture/field utilized for agricultural production purposes on the ranch/farm. Multiple fields or the entire ranch may be assessed at once. Describe the condition and pasture/field location. Note any recorded problem conditions as caused by current livestock management (C), a historic legacy site (H), or natural causes (N). For more information, refer to http://anrcatalog.ucanr.edu/pdf/21626.pdf or http://anrcatalog.ucanr.edu/pdf/8014.pdf

Question	Potential Source	Describe Condition & Location (*pasture/field*)	Cause (*C, H, or N*)
SEDIMENT			
RANGELAND & PASTURE/CROP FIELDS			
Bare soil visible throughout the rainy season?	☐Yes ☐No ☐Not Sure		
Rill or sheet erosion present?	☐Yes ☐No ☐Not Sure		
Gullies, slumps, or headcuts present?	☐Yes ☐No ☐Not Sure		
ROADS			
Surface erosion present on road(s) (rills, gullies)?	☐Yes ☐No ☐Not Sure		
Culverts or ditches cause gullies or erosion?	☐Yes ☐No ☐Not Sure		
Sediment fills drainage ditches after winter?	☐Yes ☐No ☐Not Sure		
NUTRIENTS AND PATHOGENS			
LIVESTOCK DISTRIBUTION			
Storm runoff from corrals connects to stream?	☐Yes ☐No ☐Not Sure		
Corrals used throughout the winter?	☐Yes ☐No ☐Not Sure		
Feeding, salting, or watering areas near stream?	☐Yes ☐No ☐Not Sure		
Do livestock congregate in the stream?	☐Yes ☐No ☐Not Sure		
MANURE MANAGEMENT			
Manure stockpile runoff connects to stream?	☐Yes ☐No ☐Not Sure		
Manure applied to pasture less than 2 weeks before a runoff generating rain storm?	☐Yes ☐No ☐Not Sure		
Manure applied to pastures is stored (aged) less than one month?	☐Yes ☐No ☐Not Sure		
MERCURY (for Walker Creek & Arroyo Sausal and Salmon Creek just upstream of the confluence)			
Floodplain soil disturbed, tilled, or eroding?	☐Yes ☐No ☐Not Applicable		
Stock ponds or sediment basins on the floodplain?	☐Yes ☐No ☐Not Applicable		

STREAM ASSESSMENT (required and kept on-site)

Date(s) Updated: _____

This assessment is intended for perennial or intermittent streams that provide habitat for fish or frogs or support riparian vegetation. If you do not have streams with riparian vegetation, assess the larger intermittent stream channels that flow during the entire rainy. Assess ranch/farm streams while standing near the creek. It is important to note that **concerns identified may not be caused by current livestock grazing activities**. Describe the condition and location. Note any recorded problem conditions as caused by: **C**urrent livestock management (**C**); a **H**istoric legacy site (**H**); or **N**atural causes (**N**). For more information, refer to Visual Assessment of Riparian Health (http://anrcatalog.ucanr.edu/pdf/8089LR.pdf)

Question	Potential Concern	Describe Condition & Location (*Stream*)	Cause (*C, H, or N*)
STREAM CHANNEL			
Bare soil along banks of stream?	☐Yes ☐No ☐Not Sure		
Unstable or eroding stream banks?	☐Yes ☐No ☐Not Sure		
Does the stream have the potential to support trees (look for remnant trees/shrubs along the channel)?	☐Yes ☐No ☐Not Sure		
Are crossings for livestock unstable?	☐Yes ☐No ☐Not Sure		
Grazing in riparian areas takes place all season?	☐Yes ☐No ☐Not Sure		
STREAM TEMPERATURE			
Is stream exposed to full sun?	☐Yes ☐No ☐Not Sure		
Wide and shallow streams?	☐Yes ☐No ☐Not Sure		
Does stream flow appear inadequate, given stream channel size?	☐Yes ☐No ☐Not Sure		
NUTRIENTS			
Algae growth excessive in stream?	☐Yes ☐No ☐Not Sure		

COMPLETED WATER QUALITY PROJECTS (optional)

List all past water quality concerns on the ranch/farm and describe the issue. **A concern does not indicate that livestock grazing or current management caused it**. Describe any previously implemented management practice(s) intended to fix the problem. This includes steps to plan or receive technical/financial assistance (phone calls, ranch visits, applications, etc.), actual implementation or management changes (fencing, seeding, headcut repairs, etc.), and the maintenance of projects or ranch infrastructure (cleaning culverts, scraping corrals, weed removal, etc.). Evaluate whether 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	Maintenance Needs	Evaluation (*Is more work needed?*)	Photo Avail.?
#	Describe					

FUTURE WATER QUALITY PROJECTS (required and kept on-site)

List all future potential water quality concerns on the ranch/farm with the expected pollutants from each. **A concern does not indicate that livestock grazing or current management caused it.** This includes locations where your current maintenance prevents problems, such as maintaining ranch roads following winter storms. Consider multiple options for fixing water quality concerns, such as implementing new practices and changing management or maintenance routines. Estimate the approximate cost of each option as well as the amount of time needed to conduct maintenance. Give each project a priority relative to other potential projects, indicating preferred order for implementing the project. Assignment of priority recognizes that the availability of financial and technical assistance determines when work will be done. List the steps taken to plan for the project, including participation in technical and financial assistance programs (ranch visits, meetings, applications, expected contract dates, etc). Use additional sheets if needed.

Water Quality Concern		Location (*pasture/ field*)	Options for Maintenance, Management Changes, or Practice(s) to Implement	Estimated Cost of Each Option	Priority	Implementation Planning
#	Describe					

MAPPING RANCH AND RESOURCES (required and kept on-site)

Mapping

Note the type, scale, and features added on ranch maps. The map scale should be 1:12,000 or finer resolution. Contact local RCD or NRCS for assistance. Resources are available online at http://casoilresource.lawr.ucdavis.edu/drupal/ (ability to interface with Google Maps or smart phones) and http://websoilsurvey.nrcs.usda.gov/app/

Which map types are being used for this ranch plan?

☐ topographic (USGS Quadrangle)

☐ aerial photograph(s) – dates: _____

☐ soil map units

☐ _____

☐ _____

What is the scale of your map(s)? ☐ 1:12,000 ☐ _____

☐ _____ ☐ _____

Locate the following important ranch/farm features on your map and attach the map to this plan:

☐ property lines for each APN

☐ barns, dairy facilities, holding areas, or corrals

☐ ranch roads, ponds, bridges, or culverts

☐ pastures, fence lines, or gates

☐ leased pastures, rangelands or silage fields

☐ water troughs and pipelines

☐ future water quality projects

☐ completed water quality projects

☐ monitoring points for photographs, visual inspections, or Residual Dry Matter (RDM)

☐ water troughs, tanks, spring developments, or pipelines

☐ supplements, minerals, or salt blocks

☐ potential sediment, nutrient, pathogen, or mercury water quality projects

Watershed Assessment

What types of stream(s) are on the ranch/farm? ☐ Seasonal (intermittent) ☐ Perennial ☐ Both

Name(s) of stream(s) on your ranch/farm (if named):

_____

Name of sensitive creek river, waterbody or wetland downstream (lake, bay, etc.):

_____

Is a municipal or domestic water supply source downstream? ☐ Yes ☐ No ☐ Not Sure

RANCH MAPS (Required and Kept On-site)

PASTURE USE RECORDS (optional)

Record how and when pasture/rangeland is utilized by livestock during the year. Note the livestock number, animal type, date(s) in, and date(s) out of each pasture unit. This information can be used to calculate stocking rates and carrying capacity. Note pasture/animal needs (mineral, trough, seed, etc.).

For a detailed Prescribed Grazing tool, go to
http://efotg.sc.egov.usda.gov/references/public/CA/TN_CA_Range_54.pdf

Field/Pasture		Livestock Number	Livestock Type	Stocking Density	Date(s) In	Date(s) Out	Notes *(grazing system/animal needs)*
#	Name/ Location/ Condition						

COMPLIANCE MONITORING (required and kept on-site)

Visual Inspections

Annual compliance monitoring consists of

1) Wet-season inspections of the ranch following storms or every month (December through April).

2) Two dry-season inspections, including one of the entire ranch in September prior to the rainy season.

3) One stream survey above and below (upstream and downstream) of the ranch.

Use these inspections with Pasture and Stream Assessments (pages 12 and 13) to decide whether further management practices are needed to improve water quality on the ranch. For indicators of pasture and rangeland health, refer to ftp://ftp-fc.sc.egov.usda.gov/GLTI/technical/publications/IIRH_v4_8-15-05.pdf.

Start the yearly task of compliance monitoring on the ranch in December with the wet-season inspections. Follow these up with two dry-season inspections (one must be in September) to make preparations and implement conservation practices before the winter rains arrive. To monitor more efficiently, conduct the stream survey above and below the ranch during one of the wet-season or dry-season inspections.

In the table below, note the results of monitoring activities for 1) field observations of potential water quality concerns found during visual inspections, 2) estimates of Residual Dry Matter (RDM), and 3) photographs taken. List the dates when inspections were completed on the Annual Certification Form (page 20) that will be submitted to the Water Board by November 15 of each year.

Residual Dry Matter (RDM) & Photo-Monitoring

Estimate RDM in the fall using visual and clip/dry/weigh methods (http://www.wildlandsolutions.com/rdm/) Interpret data as less than (<), equal to (=), or greater than (>) the minimum RDM objective for each pasture using the Pasture Inventory on page 11 based on *Guidelines for Residual Dry Matter (RDM) Management* (http://anrcatalog.ucanr.edu/item/8092.aspx).

Photographs are taken from the same location over time to document 1) RDM monitoring, 2) implemented conservation practices such as upgrading culverts, and 3) improvements at a site over time, such as increased vegetation cover. List and describe the locations of photo points and attach photos if possible (see *Photo-Monitoring for Better Land-Use Planning and Assessment,* http://anrcatalog.ucanr.edu/item/8067.aspx.

Date	**Location** ***(pasture/site)***	**RDM Estimate** ***(check method, photo, minimum)***	**Photo Point, Directions, Low RDM Reasons, Inspection Notes**
		☐visual ☐clip ☐photo RDM =_____lb/ac ☐> min. ☐= min. ☐< min.	
		☐visual ☐clip ☐photo RDM =_____lb/ac ☐> min. ☐= min. ☐< min.	
		☐visual ☐clip ☐photo RDM =_____lb/ac ☐> min. ☐= min. ☐< min.	
		☐visual ☐clip ☐photo RDM =_____lb/ac ☐> min. ☐= min. ☐< min.	
		☐ visual ☐ clip ☐ photo RDM = _____lb/ac ☐ > min. ☐ = min. ☐ < min.	

ANNUAL CERTIFICATION (required to be completed and submitted annually) REPORTING PERIOD OF OCTOBER 1, 20__ THROUGH SEPTEMBER 30, 20__

This ranch/farm is in compliance with the Conditional Waiver of Waste Discharge Requirements for Grazing Operations in the Tomales Bay Watershed, Resolution No. R2-2018-0046.

Farm / Ranch Name:	Phone: Email:
Mailing Address or P.O. Box:	City, State, ZIP Code:
List all Assessor Parcel Numbers (APNs) or legal description (Township, Range, Sections) for rangeland and pasture fields included in this plan. Indicate if the parcels were not previously included in the Annual Certifications and may not be part of the Notice of Intent originally filed:	
Were there Grazing Operations during the reporting period?	Y / N
Is your grazing operation still eligible for waiver enrollment (50 acres or larger)?	Y / N
During the reporting period, were changes made to your grazing operation (for example, expansion or change in herd type, addition or subtraction of parcels grazed, etc.) that would require update of your Ranch Water Quality Plan?	Y / N

Ranch Plan (check one)

☐ Ranch Water Quality Plan was completed in_____(year) and will be updated in _____(year).

☐ Ranch Water Quality Plan is expected to be finished in_____(year).

Compliance Monitoring Inspections (fill in dates when monitoring inspections were completed)

1) Wet-season inspections conducted on: Dec._____ Jan._____
   March_____ April_____
2) Dry-season inspections occurred on: June_____ Sept._____
3) Survey of stream(s) below and above ranch (Grazing Operations) completed on: _____
4) RDM results: ☐ All fields **>** minimum ☐ Most fields **=** min. ☐ Most fields **<** min. ☐ All fields **<** min.

Explanation:

_____

_____

_____

5) Are further management practices needed to improve water quality?

☐ Yes ☐ No ☐ Not Sure

If Yes is indicated in question 5, list potential water quality concerns identified during ranch/stream inspections, planned or implemented fixes, and maintenance. Add additional pages if needed.

Date	**Location** ***(pasture/field)***	**Describe Water Quality Concern**	**Notes** ***(action taken, success, & future needs)***

Completed by: ☐ Landowner ☐ Operator ☐ Other_____

_____
(Print name)

_____
(Phone) (E-mail)

_____
(Signature) (Date)

Make copies for landowner and/or tenant.
Mail completed form **before November 15** to:

San Francisco Bay Water Board
1515 Clay Street, Suite 1400
Oakland, CA 94612
ATTN: Grazing Waiver Program

Or email to: R2GrazingWaiver@waterboards.ca.gov

GLOSSARY

APN (Assessor's Parcel Number): Unique number assigned to each tract of land by the Tax Assessor.

Animal-Unit (AU): considered to be one mature cow approximately 1,000 pounds, either dry or with calf up to 6 months of age, or their equivalent, based on a standardized amount of forage consumed.

Animal-Unit month (AUM): amount of dry forage required by one animal unit for one month based on a forage allowance of 26 pounds per day. The term AUM is commonly used in three ways: (a) stocking rate, as in "X acres per AUM" (b) Forage allocations, as in "X AUMs in allotment A" (c) Utilization, as in "X AUMs taken from Unit B".

Available Forage: portion of the forage production that is accessible for use by a specified kind or class of grazing animal.

Carrying capacity: maximum stocking rate possible which is consistent with maintaining or improving vegetation or related resources. It may vary from year to year on the same area due to fluctuating forage production.

Cover: (1) the combined aerial parts of plants expressed as percent of the total area in question. (2) Shelter and protection for wildlife.

San Francisco Bay Water Board (California Regional Water Quality Control Board): Resource agency charged with protecting the quality of California waters.

Discharge: the volume of water that passes a given location within a given period of time. Usually expressed in cubic feet per second.

Erosion: the process in which a material is worn away by a stream of liquid (water) or air, often due to the presence of abrasive particles in the stream.

Enclosure: an area fenced to exclude animals.

Exclusion: range that is closed to grazing by livestock.

Flood, 100-year: a 100-year flood does not refer to a flood that occurs once every 100 years, but to a flood level with a 1 percent chance of being equaled or exceeded in any given year.

Flood plain: a strip of relatively flat and normally dry land alongside a stream, river, or lake that is covered by water during a flood.

Grade stabilization: a structure used to control the vertical and horizontal cutting in natural or artificial channels.

Grazing, Heavy: a comparative term which indicates that the stocking rate of a pasture is relatively greater than that of other pastures. Often erroneously used to mean overuse.

Grazing, Light: a comparative term which indicates that the stocking rate of one pasture is relatively less than that of other pastures. Often erroneously used to mean proper use.

Grazing Management Plan: a program of action designed to secure the best practicable use of the forage resources with grazing or browsing animals.

Grazing Period: the length of time that animals are allowed to graze on a specific area.

Grazing Season: (1) On public lands, an established period for which grazing permits are issued. May be established on private land in a grazing management plan. (2) The time interval when animals are allowed to utilize a certain area.

Grazing System: a specialization of grazing management which defines the periods of grazing and non-grazing. Descriptive common names may be used; however, the first usage of a grazing system name in a publication should be followed by a description using a standard format. This format should consist of at least the following: The number of pastures (or units) number of herds, length of grazing periods, length of non-grazing periods for any given unit in the system followed by an abbreviation of the unit of time used.

Gully: an erosion channel formed by concentrated surface runoff; larger than 1 square foot in cross-sectional area (larger than 1 foot deep by 1 foot wide).

Headwater(s): (1) the source and upper reaches of a stream; also the upper reaches of a reservoir. (2) the water upstream from a structure or point on a stream. (3) the small streams that come together to form a river.

Historical influence: sediment delivery that has a decades-long history.

Hydrological connectivity: degree to which water from a source site or unstable area is conveyed to the network of the natural watercourse of concern.

Impermeable layer: a layer of solid material, such as rock or clay, which does not allow water to pass through.

Infiltration: flow of water from the land surface into the subsurface.

Landslide treatment: treating in place material such as mine spoils, mine waste, or overburden to reduce downslope movement of sediment.

Management induced: sediment delivery traced to land management and use.

Mass wasting: downslope movement of soil mass under force of gravity; often used synonymously with “landslide.”

Mercury: A silvery-white poisonous metallic element, liquid at room temperature and used in thermometers, barometers, vapor lamps, and batteries and in the preparation of chemical pesticides.

Methylmercury: An organic form of mercury that is highly toxic and is the main culprit in mercury poisoning. Methylmercury is easily absorbed into the living tissue of aquatic organisms, is not easily eliminated, and therefore accumulates in fish that are predators. The degree to which mercury is transformed into methylmercury and transferred up the food chain through bioaccumulation depends on factors such as water chemistry and the complexity of the food web.

Natural: sediment delivery resulting from natural influences only.

Non-point source (NPS) pollution: pollution discharged over a wide land area, not from one specific location. These are forms of diffuse pollution caused by sediment, nutrients, organic and toxic substances originating from land-use activities, which are

carried to lakes and streams by surface runoff. Non-point source pollution is contamination that occurs when rainwater, snowmelt, or irrigation washes off plowed fields, city streets, or suburban backyards. As this runoff moves across the land surface, it picks up soil particles and pollutants, such as nutrients and pesticides.

Nutrients: Nutrients are chemical elements and compounds found in the environment that plants and animals need to grow and survive. For water-quality investigations the various forms of nitrogen and phosphorus are the nutrients of interest. The forms include nitrate, nitrite, ammonia, organic nitrogen (in the form of plant material or other organic compounds), and phosphates (orthophosphate and others). Nitrate is the most common form of nitrogen and phosphates are the most common forms of phosphorus found in natural waters. High concentrations of nutrients in water bodies can potentially cause eutrophication and hypoxia.

Overgrazing: continued heavy grazing which exceeds the recovery capacity of the community and creates a deteriorated range.

Overstocking: placing a number of animals on a given area that will result in overuse if continued to the end of the planned grazing period.

Overuse: utilizing an excessive amount of the current year's growth which, if continued, will result in range deterioration.

Pathogen: a disease-producing agent; usually applied to a living organism. Generally, any viruses, bacteria, or fungi that cause disease.

Peak flow: the maximum instantaneous discharge of a stream or river at a given location.

Photopoint: an established point used to conduct photographic monitoring.

Legacy: something received from an ancestor or predecessor or from the past.

Range condition: (a) A generic term relating to present status of a unit of range in terms of specific values or potentials. Specific values or potentials values or potentials must be stated. (b) Some agencies define range condition as follows: The present state of vegetation of a range site in relation to the climax (natural potential) plant community for that site. It is an expression of the relative degree to which the kinds, proportions, and amounts of plants in a plant community resemble that of the climax plant community for the site.

Residual Dry Matter (RDM): the old plant material left standing or on the ground at the beginning of a new growing season. It indicates the combined effects of the previous season’s forage production and its consumption by grazing animals of all types. RDM remaining in the fall will influence subsequent species composition and forage production.

Rest: leaving an area ungrazed, thereby foregoing grazing of one forage crop. Normally rest implies absence of grazing for a full growing season or during a critical portion of plant development, i.e., seed production.

Rest-rotation: a grazing management scheme in which rest periods for individual pastures, paddocks, of grazing units, generally for the full growing season, are

incorporated in to a grazing rotation.

Revegetation: to plant or replant (barren or denuded land) with vegetation.

Rill: an erosion channel formed by concentrated surface runoff; less than 1 square foot in cross-sectional area (less than 1 foot deep by 1 foot wide).

Riparian zone: the banks and adjacent areas of water bodies, water courses, seeps, and springs whose waters provide soil moister sufficiently in excess of that otherwise available locally so as to provide a more moist habitat than that of contiguous flood plains and uplands.

Road cut failure: sediment delivery influenced by the failure of the slope left after a hillside is cut to make a road.

Road drainage design: sediment delivery influenced by the concentration and channeling of runoff from a road.

Road fill failure: sediment delivery influenced by the failure of materials built up to form a road.

Road improvement: measures to reduce road-associated erosion, including culvert improvement, road grading, and road surfacing.

Rotational grazing: a grazing scheme where animals are moved from one grazing unit (paddock) in the same group of grazing units to another without regard to specific graze rest periods or levels of plant defoliation.

Sacrifice area: a portion of the range, irrespective of site, that is unavoidably overgrazed to obtain efficient overall use of the management area.

Sediment: material transported and deposited by water or air.

Sheet erosion: the loss of thin layers of soil across a large surface area.

Short-duration grazing: grazing management whereby relatively short periods (days) of grazing and associated non-grazing are applied to range or pasture units. Periods of grazing and non-grazing are based upon plant growth characteristics. Short duration grazing has nothing to do with intensity of grazing use.

Stocking density: the relationship between number of animals and area of land at any instant of time. It may be expressed as animal units per acre, animal units per section, or AU/ha.

Stocking plan: the number and kind of livestock assigned to one or more given management areas or units for a specified period.

Stocking rate: the number of specific kinds and classes of animals grazing or utilizing a unit of land for a specified time period. May be expressed as animal unit months or animal unit days per acre, hectare, or section, or the reciprocal (area of land/animal unit month or day). When dual use is practiced (e.g., cattle and sheep), stocking rate is often expressed as animal unit months/unit of land or the reciprocal.

Stream: a general term for a body of flowing water; natural water course containing water at least part of the year.

Streambank protection: stabilization and protection of streambanks, lakes, estuaries, or excavated channels against erosion.

Surface treatment: efforts such as mulching used to control erosion on exposed, disturbed, or bare soils.

TMDL (Total Maximum Daily Load): the assessment of problems, sources, and control actions to restore and protect water quality in individual bodies of water.

Trampling: treading underfoot; the damage to plants or soil brought about by movements or congestion of animals.

Tributary: a smaller river or stream that flows into a larger river or stream. Usually, a number of smaller tributaries merge to form a river.

Turbidity: the amount of solid particles that are suspended in water and that cause light rays shining through the water to scatter. Thus, turbidity makes the water cloudy or even opaque in extreme cases. Turbidity is measured in nephelometric turbidity units (NTU).

Undergrazing: the act of continued underuse.

Unstable area: site with potentially deliverable sediment.

Water quality: a term used to describe the chemical, physical, and biological characteristics of water, usually in respect to its suitability for a particular purpose.

Watershed: the land area that drains water to a particular stream, river, or lake. It is a land feature that can be identified by tracing a line along the highest elevations on a map, often a ridge.