

**ATTACHMENT B
MONITORING AND REPORTING CONDITIONS
FOR DISCHARGES ENROLLED UNDER THE
WAIVER OF WASTE DISCHARGE REQUIREMENTS FOR DISCHARGES
RELATED TO TIMBER HARVESTING ACTIVITIES
PURSUANT TO
CALIFORNIA WATER CODE SECTION 13269**

This attachment contains Monitoring and Reporting conditions that are applicable to the various timber harvesting activity categories specified in Attachment A “Waiver of Waste Discharge Requirements for Discharges related to Timber Harvesting Activities” (Waiver). The purpose of these monitoring conditions is to assure compliance with Waiver criteria and conditions, to verify the adequacy and effectiveness of the Waiver, to assist dischargers with implementation and maintenance of water quality protection measures and to identify and correct waste discharges that violate or threaten to violate water quality control plan (Basin Plan) requirements. The attachment specifies conditions that are consistent with California Water Code (Water Code) section 13269, subdivision (a)(2) and are applicable to Waiver Categories 1 through 5 in Attachment A.

I. AUTHORITY TO REQUIRE MONITORING

Water Code section 13269, subdivision (a)(2) requires a waiver of waste discharge requirements to include as a condition the performance of individual, group, or watershed-based monitoring and the monitoring be designed to support the development and implementation of the waiver program, unless the Central Valley Water Board determines, consistent with Water Code section 13269, subdivision (a)(3) that discharges subject to the waiver do not pose a significant threat to water quality. This attachment sets forth monitoring and reporting conditions that comply with Water Code section 13269.

II. MONITORING DESCRIPTIONS¹

A. Field Verification Monitoring (includes all monitoring types conducted by direct field observation)

Agency Monitoring – Each timber harvesting activity conducted pursuant to approval by the California Department of Forestry (CAL FIRE) and the United States Forest Service (U.S. Forest Service) are subject to compliance monitoring conducted by CAL FIRE (on private lands) and the U.S. Forest Service (on federal lands) to evaluate compliance with CAL FIRE’s Forest Practice Rules or

¹ A multi-agency timber harvest monitoring workgroup (MOU Monitoring Workgroup) has developed a “Joint Report on Monitoring Terms and Authorities” that contains terms, descriptions and criteria relating to water quality related monitoring of timber operations. The descriptions in this section (with the exception of the term “Agency Monitoring”) are derived from the “Joint Report” which was developed by representatives of the participating Regional Boards, CAL FIRE and other agencies.

U.S. Forest Service best management practices (BMP) guidance documents. CAL FIRE and the U.S. Forest Service have been asked to notify the Central Valley Water Board when Agency Monitoring detects violation of CAL FIRE rules or U.S. Forest Service BMP requirements that relate to water quality protection measures.

Implementation Monitoring - Implementation Monitoring consists of detailed visual monitoring of harvested areas and roads/landings prior to the rainy season, with emphasis placed on determining if management measures (such as erosion control measures, riparian buffers) were implemented or installed in accordance with approved timber harvest projects including Waiver eligibility criteria. Implementation Monitoring may include photo-documentation of implemented or installed management measures (photo-point monitoring). Implementation Monitoring is essential to assure that water quality protection measures are in place prior to the onset of significant precipitation. Implementation Monitoring is applied at the project scale. Implementation Monitoring is conducted by the discharger and by regulatory agencies during compliance or completion inspections. BMP implementation monitoring conducted by the U.S. Forest Service is considered to be both Agency Monitoring and Implementation Monitoring for the purposes of this Attachment.

Effectiveness Monitoring – Effectiveness Monitoring consists of monitoring subsequent to harvest to evaluate whether particular management measures are or were effective at achieving desired results. Effectiveness Monitoring may be applied at a range of spatial scales, focusing on specific management measures for multiple rainfall events or multiple years. Effectiveness Monitoring may include visual hillslope monitoring (observations outside of the stream or stream channel, i.e., on the harvested slopes) or visual instream monitoring (evaluation of instream conditions). Effectiveness Monitoring is applied at the project scale. Effectiveness Monitoring is generally conducted by the discharger and by regulatory agencies during site inspections.

Forensic Monitoring - Forensic Monitoring employs visual field detection techniques to detect significant pollution caused by failed management measures, failure to implement necessary measures, legacy timber activities, non-timber related land disturbances and natural sediment sources. Forensic Monitoring may also include photo-point monitoring to document pollution sources. Forensic Monitoring is most successful when criteria such as storm events of particular size are used to trigger field investigations for timely detection and repair of controllable sediment sources. Forensic Monitoring is typically applied at the sub-watershed or project scale. Forensic Monitoring is generally conducted by the discharger and by agencies during periodic compliance inspections.

Water Quality Compliance Monitoring – Water Quality Compliance Monitoring employs water column sampling to determine whether waste discharges (sediment, turbidity, temperature and pesticide concentrations) from timber harvesting activities are in compliance with Basin Plan standards. In most instances, it is necessary to collect pre-project data and/or establish reference or control sites to make compliance monitoring successful. Water Quality Compliance Monitoring is typically applied at the sub-watershed or project scale focusing on the effects of a single project for a period greater than the active life of the project. Water Quality Compliance Monitoring is generally required of and is the responsibility of the discharger but may be conducted by regulatory agencies in response to complaints or as follow-up to violations.

Assessment and Trend Monitoring – Assessment Monitoring is used to characterize existing water quality or related stream conditions on a watershed scale at a discrete instant or over a defined time period. Examples include monitoring to determine reference or baseline conditions, determine existing beneficial uses, provide information for cumulative watershed effects analyses in order to develop mitigation measures for timber harvesting activities or other projects in a given watershed, and provide information to select sites for restoration and/or remedial work to improve water quality.

Trend Monitoring is used to characterize water quality conditions over time. Trend Monitoring is typically applied at a watershed scale, focusing on the combined effects of all past and present watershed management activities over a period of time. Examples of trend monitoring objectives include; characterize watershed conditions resulting from combined effects of land use activities over time, determine whether Basin Plan water quality objectives are achieved and maintained over time and, in impaired waterbodies, assist in restoration or remedial work to maximize benefits to water quality. Assessment and Trend Monitoring efforts are the most intensive and costly monitoring types and the monitoring, to be scientifically valid, must occur over a long period of time and take into account all waste sources and natural inputs in the watershed. Assessment and Trend Monitoring is usually conducted by the discharger but may, in rare instances and when funds are available, be conducted by regulatory agencies.

B. Waiver Compliance Monitoring (Waiver condition monitoring)

Waiver Compliance Monitoring is non-field monitoring submitted by the discharger to verify compliance with all applicable timber waiver criteria and conditions. Attachment A contains conditions that require dischargers (landowner for non-federal lands, Forest Supervisor or District Ranger for federal lands) enrolled in Categories 2, 3, 4, and 5 to sign and submit a “final certification” that certifies that:

- Timber harvesting activities were conducted in conformance with the approved plan or accepted notice (for private lands) and with all applicable provisions of the waiver.
- Discharges resulting from the timber harvesting activities and pesticide applications were in compliance or expected to be in compliance with all requirements of applicable water quality control plans.

III. MONITORING CRITERIA

Site-specific factors must be considered when determining the type of monitoring to be required for timber harvesting activities. Site-specific determinations should focus primarily on the threat to water quality, taking into account the effectiveness of monitoring, monitoring suitability, and access. In general, the rigor and complexity of monitoring increases as the threat to water quality increases.

A. Threat to Water Quality – Threat to water quality is a function of site-specific characteristics that, individually or in combination, can trigger the need for increased levels of monitoring. Under each characteristic listed below, examples of conditions that correspond to an increased threat to water quality are provided.

1. Distribution and Sensitivity of the Beneficial Uses of Water
 - Presence of domestic water supplies
 - Presence of aquatic species (including listed species)
 - Close proximity of operations to other critical beneficial uses or sensitive receptors
2. Current Water Quality Conditions
 - Existing TMDLs or 303(d) listings
 - Documented non-compliance with Basin Plan standards
 - Known or suspected watershed impacts
3. Physical Setting
 - Unstable geologic setting / steep slopes
 - Erodible soils
 - Existing landslides or active erosion sites
 - Roads or watercourse crossings in poor condition
 - Harsh climates and/or intense precipitation regimes
4. Type and Scope of Proposed Activities
 - Intense silvicultural and/or yarding methods
 - Intensity of site preparation and/or road construction
 - Winter operations and/or “alternative” or “in lieu” practices
 - Operations in or near watercourses and flood-prone areas

B. Water Column Monitoring Suitability – The suitability of water column monitoring is a function of various factors related to the feasibility of conducting monitoring. In some cases, monitoring that is considered necessary may be infeasible due to factors such as: lack of available and/or appropriate sampling locations, inadequate streamflow regime, difficult access, safety concerns, potential for vandalism, and potential for equipment damage or loss. In some situations, bioassessment and/or physical stream condition evaluation or monitoring may provide a better indication of potential water quality and beneficial use impacts than water column sampling. Bioassessment monitoring should be approved, by the Executive Officer, where it provides the most accurate and useable information or where water column monitoring cannot be feasibly conducted due to safety, access or other factors. Water column monitoring for sediment (the primary pollutant in timber related discharges) is complicated by the fact that sediment occurs naturally, is in runoff (discharged from) non-timber related land use activities, and may be elevated due to “legacy” timber harvesting (logging conducted prior to improved CAL FIRE and U.S. Forest Service processes).

C. Watercourse Assessment for “High Harvest” Watersheds (development and submittal) - A Watercourse Assessment shall be conducted at low streamflow conditions and submitted to the Central Valley Water Board when a timber harvesting activity is proposed in a Class I CalWater Planning Watershed where timber harvesting activities over the last 10 years **meet or exceed the following criteria:**

- 50 percent of the watershed area has been harvested, and even-aged management prescriptions constitute 50 percent of the harvested areas.
- 40 percent of the watershed area has been harvested, and even-aged management prescriptions constitute 60 percent of the harvested areas.
- 30 percent of the watershed area has been harvested, and even-aged management prescriptions constitute 70 percent of the harvested areas.

The Watercourse Assessment shall be submitted to the Executive Officer with the Certification Notice or as soon as possible thereafter following the low streamflow period. The Executive Officer will evaluate the Watercourse Assessment and will determine the need for additional monitoring requirements including consideration of Water Quality Compliance and Assessment/Trend monitoring. The Watercourse Assessment shall include, at a minimum, the following:

1. A topographic based map with information required by California Board of Forestry and Fire Protection (BOF) Technical Rule Addendum No. 2 (2005 BOF Forest Practice Rules) and indicating the location of watercourse

assessment monitoring locations described in 2., below. The map shall also include the locations of photo-documentation points, where required.

2. A detailed report, prepared by a qualified professional²¹, describing the condition of all Class I watercourses in the CalWater Planning Watershed, both upstream and downstream of the proposed timber harvest area. The report shall include, but not be limited to, the following:
 - Gravel Embeddedness – Description (based upon visual observations) of the degree gravel is embedded with sand or finer sediments. Photo-documentation required.
 - Pool Sedimentation – Description (based upon visual observations) of degree of sediment depositions in pools. Photo-documentation required.
 - Stream Channel Aggradation – Degree that stream channel has been raised by sedimentation.
 - Streambank Cutting, Mass Wasting and Stream Downcutting – Description of streambank condition(s) – Photo-documentation required.
 - Stream-Side Vegetation – Description of stream-side vegetation.
 - Recent Flood History – Description of unusually high recent flows and whether these high flows were related to timber harvesting activities.

The above watercourse conditions shall be evaluated for every Class I watercourse within the CalWater Planning Watershed area that may be impacted by the proposed timber harvesting activity. The topographic map, detailed report and required photo-documentation must be submitted at least 30 days prior to start of proposed timber harvesting activities. The Executive Officer may require development and submittal of a Watershed Assessment for any timber harvesting activity that poses a significant threat to water quality.

IV. MONITORING CONDITIONS

Each discharger enrolled in the Waiver contained in Attachment A shall conduct monitoring as specified in this attachment (as described below) and as required in the Implementation, Forensic and Effectiveness Monitoring and Reporting Program Order No. R5-2014-xxxx.

A. Agency Monitoring² –Waiver Category 1 through Category 5 shall be subject to Agency Monitoring. Dischargers enrolled in Waiver Category 1 and Category 5 (for minor/exempt projects only) need only be subject to Agency Monitoring.

B. Implementation Monitoring² – Dischargers shall conduct Implementation Monitoring as follows: (1) all Notices of Emergency or Exemption seeking

¹ “Qualified professional” means a person with the appropriate training and/or licensing to prepare technical reports designed to prevent or minimize the discharge of waste and to conduct site inspections.

coverage under Waiver Category 2, (2) THPs, NTMPs and other plans submitted and approved by CAL FIRE seeking coverage under Waiver Category 3 or 4; and (3) timber harvest proposals approved by the U.S. Forest Service (other than Forest Stand Improvement and/or Hazard Tree Removal Projects) seeking coverage under Waiver Category 5. Implementation photo-point monitoring will be required when the conditions listed in Attachment A, Category 4, Eligibility Criteria b. for soils, unstable areas and large watercourse crossings are present. Implementation photo-point monitoring may also be required if directed, in writing, by the Executive Officer. Implementation monitoring is considered the most critical monitoring type with respect to preventing water quality impairment.

C. Effectiveness and Forensic Monitoring² – Dischargers shall conduct visual Forensic and Effectiveness Monitoring, **in addition to Implementation Monitoring**, for the following: (1) Waiver Category 2 Emergency Notices involving fire salvage only, (2) Waiver Category 3 and 4 THPs, NTMPs and plans and (3) Waiver Category 5 timber sales or projects. Dischargers conducting timber harvesting activities under Waiver Categories 3 and 4 (nonfederal lands) that meet all the following criteria will **not** be required to conduct Effectiveness and Forensic Monitoring:

- No constructed or re-constructed Class I, II or Class IV (with domestic use) watercourse crossings.
- No ground based equipment operations within Class I, II or IV (with domestic use) watercourse protection zones.
- No winter operations within any Class I, II or IV (with domestic use) watercourse protection zones or on areas classified high or extreme erosion hazard rating.
- No road construction or re-construction within 500 feet upslope of a Class I, II or IV (with domestic use) watercourse.
- No landing construction or re-construction within Class I, II or IV (with domestic use) watercourse protection zones.
- No heavy equipment operations on areas classified High or Extreme Erosion Hazard Rating that have potential to impact water quality.
- No “in-lieu” or “alternative” practices that have potential to impact water quality.
- No ground-based equipment used on slopes over 65 percent or slopes over 50 percent classified as High or Extreme Erosion Hazard Rating.

The U.S. Forest Service shall conduct Effectiveness and Forensic monitoring when: (1) the discharger’s cumulative watershed effects analysis indicates that the project, combined with other U.S. Forest Service projects conducted in the watershed over the past 10 years, may cause any watershed or sub-watershed to exceed a threshold of concern as determined by various models (i.e., Equivalent Roaded Acres (ERA), Surface Erosion (USLE), Mass Wasting (GEO), etc.).

D. Water Quality Compliance Monitoring² – Dischargers shall conduct Water Quality Compliance Monitoring **in addition to Implementation, Effectiveness and Forensic Monitoring**, upon notice by the Executive Officer, when, for example, any of the following conditions are detected or reported:

- General or widespread failure of an active project to comply with CAL FIRE Forest Practice Rules or U.S. Forest Service BMP guidance documents or Waiver Criteria and Conditions regarding implementation of management measures relating to water quality protection.
- General or widespread failure of management measures relating to water quality protection due to improper implementation, installation or inadequate maintenance.
- Identification of discharges or threatened discharges of sediment and/or pesticides or increases in water temperature resulting from timber harvesting activities covered under the Waiver that are likely to cause or contribute to a violation of the applicable water quality control plan, including water quality objectives listed in Attachment 1.

Water Quality Compliance Monitoring Programs will be developed and issued by the Executive Officer on a site-specific basis. Water Quality Compliance Monitoring may be directed by the Executive Officer as a result of staff review of a Watercourse Assessment for “High Harvest” Watersheds submitted in accordance with Part III.C of this attachment.

E. Assessment and/or Trend Monitoring² – Dischargers shall conduct Assessment and/or Trend Monitoring **in addition to Implementation, Effectiveness and Forensic Monitoring and either in concert with or in lieu of Water Quality Compliance Monitoring**, upon notice by the Executive Officer, when, for example, any of the following conditions occur:

- Significant and recurring violations of sediment, turbidity, temperature or pesticide water quality control plan objectives in a Class I CalWater Planning Watershed.
- Identification of an immediate and long-term threat to critical downstream beneficial uses resulting or that could result from timber harvesting activities conducted in a CalWater Planning Watershed.
- Harvesting in areas tributary to 303(d) listed waterbodies where timber harvesting activities threaten to significantly delay recovery of the waterbody.

² The Executive Officer may increase or decrease the monitoring level for specific timber harvesting proposal(s) as site conditions and risk to water quality dictates.

Assessment and/or Trend Monitoring Programs will be developed and issued by the Executive Officer on a site-specific basis. Assessment and/or Trend Monitoring may be directed by the Executive Officer as a result of staff review of a Watercourse Assessment for "High Harvest" Watersheds submitted in accordance with Part III.C of this attachment.

F. General Reporting Requirements

Submission of Monitoring Reports and Data – The discharger shall submit all required monitoring reports to the Central Valley Water Board in accordance with the reporting requirements specified in Implementation, Forensic and Effectiveness Monitoring and Reporting Program No.R5-2014-xxxx and any other monitoring and reporting program issued by the Executive Officer. The discharger shall also report monitoring data and results, in a timely manner, for all water quality related monitoring conducted independent of the requirements of this Waiver.

Violation and Failure Reporting - The discharger shall report as soon as possible by telephone, but no later than 48 hours after detection of any of the following:

- Discharge(s) resulting in violation of an applicable Basin Plan requirements
- Failure of a major management measure(s) (large fill area, watercourse diversion, major road or skid trail failure within or adjacent to a watercourse protection zone)
- New landslide activity that may discharge sediment to watercourses
- Violation(s) of eligibility criteria or conditions specified in Attachment A.

A written report regarding such violation(s) and/or management measure failure(s) including planned or implemented corrective actions shall be submitted within 14 days following detection. The written report shall include all information specified in the Implementation, Forensic and Effectiveness Monitoring and Reporting Program No. R5-2014-xxxx.

V. MONITORING AND REPORTING PROGRAM ISSUANCE

The Executive Officer shall issue, to all dischargers upon their enrollment in the Waiver, Implementation, Forensic and Effectiveness Monitoring and Reporting Program No. R5-2014-xxxx. The Executive Officer may issue site-specific and individually developed Water Quality Compliance and Assessment/Trend watershed scale monitoring and reporting programs in accordance with these Monitoring and Reporting Conditions (Attachment B). The Executive Officer may also revise and re-issue Monitoring and Reporting Programs at any time. The discharger shall comply with all Monitoring and Reporting Programs issued under this Waiver.