

California Regional Water Quality Control Board
North Coast Region

Monitoring and Reporting Program No. R1-2006-0103

For

THE PACIFIC LUMBER COMPANY,
SCOTIA PACIFIC COMPANY LLC,
AND SALMON CREEK CORPORATION

P.O. Box 37
Scotia, CA 95565

ELK RIVER and FRESHWATER CREEK WATERSHEDS
Humboldt County

This Monitoring and Reporting Program (MRP) is issued pursuant to California Water Code Section 13267(b) and is associated with the Watershed-wide Waste Discharge Requirements (hereinafter referred to as “WWDRs”) Order No. R1-2006-0039 and Order No. R1-2006-0041, for Elk River and Freshwater Creek watersheds, respectively. The WWDRs are issued to the Pacific Lumber Company, Scotia Pacific Company LLC, and Salmon Creek Corporation (hereinafter “Discharger”). The reasons for requiring this information from the Discharger and the evidence supporting this requirement can be found in the related findings adopted with the WWDRs in Resolution No. R1-2006-0038, and Resolution No. R1-2006-0040.

The WWDRs establish receiving water limitations on peak flow and sediment delivery from harvest-related landsliding. Compliance with these receiving water limitations is derived using mathematical models (the “Peak Flow Model” and “Landslide Reduction Model”), which describe how landsliding and peak flow are affected by rate of timber harvest. The application of the models each produce an allowable annual harvest level. In cases where the models specify different harvest rates for a particular area, the more restrictive rate applies. In the event that the harvest rate from the Landslide Reduction Model is limiting, the WWDRs do allow the Discharger to exceed that rate (up to the limit specified by the Peak Flow model) provided that there is zero discharge of sediment from harvest-related landslides from the additional harvested acres and that a monitoring program to prove no such discharge has occurred has been approved by the Executive Officer. The Discharger terms these additional acres of harvest area “Tier 2” acres.

The Discharger has prepared a “THP Unit Review for Tier 2 Enrollment” and Quality Assurance Project Plans for “Acreage Enrollment and Compliance Monitoring” and “Harvest-related Landslide Monitoring Plan.” These plans describe the measures to be taken in preparing timber harvest plans (THPs) for enrollment under Tier 2, the protocols for enrollment and tracking of acreages under Tier 2, and the procedures and protocols

for monitoring landslides as required by Order No. R1-2006-0039 and Order No. R1-2006-0041 for Elk River and Freshwater Creek, respectively.

Reference to those plans and their inclusion herein constitutes written approval of the monitoring plan by the Regional Water Board Executive Officer as required by the WWDRs. Its implementation is ordered by the Executive Officer through this Monitoring and Reporting Program.

This Order in no way limits the authority of the Regional Water Board Executive Officer to require the Discharger to conduct additional investigation, monitoring, and reporting consistent with the California Water Code. This Order may be revised by the Executive Officer as additional information becomes available. This Order may also be revoked by the Executive Officer upon determining that the approved monitoring program is insufficient to ensure ongoing compliance with the zero discharge prohibition for discharges of sediment from harvest-related landslides to waters of the state.

The information required by this Order is necessary to ensure the ongoing compliance of the Discharger with the zero discharge prohibition for discharges of sediment from harvest-related landslides to waters of the state. As documented in the WWDRs and in the supporting administrative record, timber harvest activities in the Freshwater and Elk River watersheds have historically caused landslides that have discharged sediment to waters of the state. These discharges have resulted in impacts on beneficial uses because they have reduced watercourse capacity and have degraded the quality of surface waters. Unlike other THPs covered by the WWDRs, Tier 2 THPs are prohibited from causing any discharge of sediment from harvest-related landslides to waters of the state. Gauging the potential risk of landslides on individual THPs is a complex task, requiring specialized information about site-specific conditions. Landslide prevention requires onsite assessment to identify incipient landslides following triggering events. More detailed information is available in the Regional Water Board's public file on this matter.

Under the authority of the California Water Code section 13267(b), the Discharger named above is required to comply with the following:

A) Objectives

- 1) The objective of the program is to provide an enforceable monitoring plan to determine the delivery of harvest-related landslides occurring in and downslope of the THP units enrolled as Tier 2 areas of the WWDRs, and to notify the Executive Officer of discharges in a timely fashion to determine a response and possible corrective action if there is delivery of a harvest-related landslide to a watercourse
- 2) For the purposes of this order, "landslides" shall be defined as the downslope movement, under gravity, of masses of soil and rock material. More specifically, the focus is shallow debris sliding, formed by translational movement of soil and rock material, usually shallow in nature, along a planar or undulating surface of rupture.

B) Tier 2 Acreage Landslide Field Inspection

In the year following initial harvest of a THP unit enrolled under Tier 2, the unit will

receive, at a minimum, two (2) hillslope investigations to search for new landslides or enlargement of existing landslides during the winter season.

- 1) This hillslope assessment will be performed according to PALCO Watershed Operating Protocol No. 11 (WOP-11): "Hillslope Sediment Source Inspection."
- 2) The Discharger will traverse the area within and downslope of each THP unit enrolled in Tier 2 to determine whether new landslides have occurred or existing landslides within or downslope of these units have reactivated, based on maps produced during the initial geologic investigation included in the THP. The assessment also includes walking the boundary between watercourses and harvest units to identify discharges of landslide sediment.
- 3) During the assessment, field inspectors will record any sediment source (not just landslides), regardless of size, that is delivering or in a position to discharge to a watercourse.
- 4) Follow-up assessments with Regional Water Board staff will determine whether the identified sediment sources are landslides and whether they are harvest-related.

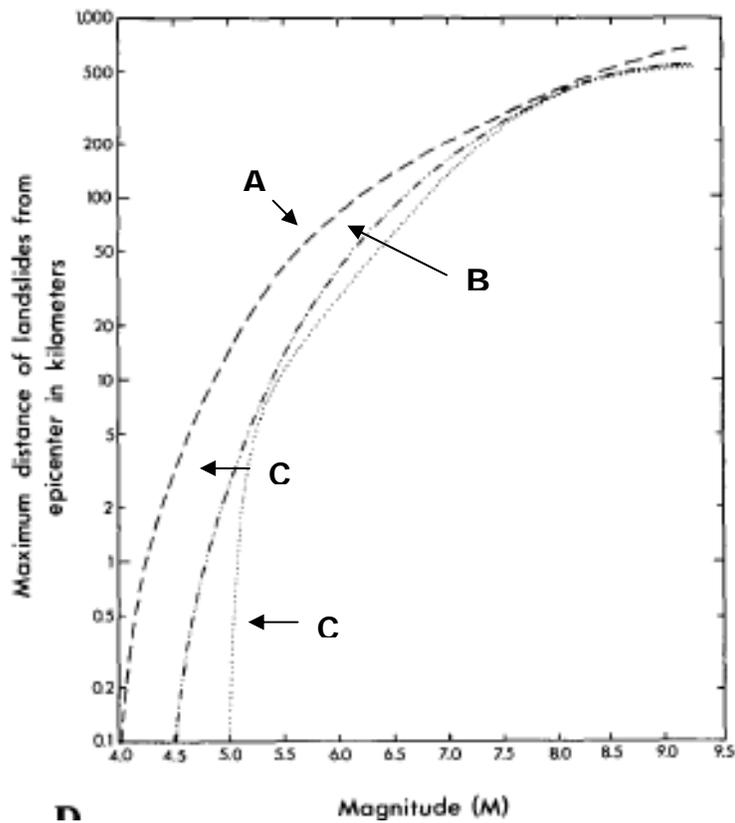
C) Timing of Inspections

- 1) Each THP unit enrolled in Tier 2 will receive several hillslope inspections in accordance with the Discharger's WOP-11.
 - a) The first inspection will occur pre-harvest to document any existing landslides that were not identified in the THP documentation.
 - b) The second inspection will occur upon completion of harvest activities. This inspection also will ensure that the THP unit has been properly treated for winter storms.
 - c) Storm-related inspections following significant rainfall events as described below.
 - (1) Inspection-triggering Rainfall
 - (a) 2.0 inches in a 24-hour period, following 10 inches of cumulative rainfall beginning October 1 of each year, and/or
 - (b) 1 inch in a 6-hour period, regardless of cumulative rainfall.
 - (c) Even if no events meet the storm-related inspection criteria by April 1 of each hydrologic year (October 1 – September 1), an inspection shall be performed by April 4 of that hydrologic year.
 - (2) In addition to the above situations, inspections shall be performed
 - (a) upon discovery of a landslide,
 - (b) when the Executive Officer determines one is warranted, or
 - (c) when post-storm road and landscape surveys reveal that the two watersheds have suffered a combined total of 10 or more landslides, in which case it will be assumed that a triggering event has occurred, and an inspection will be conducted for every THP unit enrolled under Tier 2.

D) Earthquake Triggering Events

- 1) The defining criterion for a significant earthquake is based on magnitude and distance of the epicenter from the watershed referencing Curve A in Figure 1 from Keefer (1984).
- 2) An inspection will be made following a significant earthquake, which will look for cracks and other signs of potential failure as well as actual landslides within the area that lies within the radius centered over the epicenter defined by the maximum distance for the earthquake magnitude.

Figure 1. Maximum distance from epicenter to landslides for earthquakes of different magnitudes (from Keefer 1984:Figure 2D). A is for disrupted slides or fall, B is coherent slides and C is lateral spread or flow type landslides. A includes rock and soil falls, slides and avalanches. B includes slumps and slides in rock and soil, and slow moving earthflows. C includes soil lateral spreads and rapid soil flows.



Notifications

If a landslide is observed either during an inspection or at any other time, or if there is evidence of an incipient landslide, the Discharger shall notify the Executive Officer by phone within 48 hours and in writing within 10 days. Notification shall include a description of the landslide, an estimate of the volume of the zone of depletion, an estimate of any sediment delivery, observations regarding impacts to the stream and/or stream corridor, any causative factors, and corrective actions taken to abate any discharges and stabilize the landslide.

E) Corrective Action

- 1) If a new landslide or a reactivated landslide is identified during any of the inspection processes, the Discharger will cease all operations on Tier 2 acres.
- 2) The Discharger will cooperate with the Regional Water Board staff in investigations to determine landslide cause and delivery, and potential remediation operations. There will be no further enrollments under Tier 2 pending the investigation.

F) Compilation of Inspection Results

- 1) An annual report summarizing monitoring activities and results for the calendar year is due to be received by the Executive Officer no later than May 1 of the each calendar year.
- 2) The annual Harvest-Related Landslide Monitoring Report shall contain:
 - (1) Introduction describing the purpose and objectives of the monitoring
 - (2) Rainfall Record (daily rainfall amounts, tabular and graphic displays)
 - (3) Hillslope inspection results
 - (4) Inspection activity logs
 - (5) Notifications
 - (6) Corrective actions
 - (7) Problems encountered and resolution, and
 - (8) Potential modifications to the process.

G) Quality Assurance and Quality Control Project Plans (QAPPs)

- 1) The Discharger has drafted QAPPs for the monitoring and reporting activities to be implemented. The QAPPs shall be revised to harmonize with this program and address all aspects of the monitoring program and will contain, at a minimum:
 - a) Standard procedures for the establishment of repeatable sampling locations;
 - b) Standard operating procedures for each field method and piece of equipment used;
 - c) Standard operating procedures for each laboratory method and piece of equipment used;
 - d) Standard operating procedures;
 - e) Measures for quality assurance associated with monitoring and reporting procedures;
 - f) Measures for quality control associated with monitoring and reporting procedures;
 - g) A training program for personnel conducting monitoring activities; and
 - h) Measures for adapting the QAPP, when necessary.
- 2) The Discharger may propose to use an existing QAPP for these measurements as long as it contains the above list of elements.
- 3) A revised QAPP that fully complies with this Order is required to be received by the Regional Water Board Executive Officer by **November 1, 2006**.

- 4) Following implementation of the approved QAPP, the Discharger may propose changes to the procedures and control measures specified in the QAPP as necessary, and submit the changes to the Executive Officer for approval. Following approval of changes to the QAPP, the Discharger shall document such changes and implement the new procedures and control measures immediately.

H) Work Conducted by Licensed Professionals

The practice of geology is identified and regulated under Chapter 12.5 (Geologists and Geophysicists Act) of the Business and Professions (B&P) Code, including Rules and Regulations (CCR Title 16, Division 29) and any related sections of the B&P Code, Government Code, Penal Code, and/or Evidence Code. The practice of engineering in California is identified and regulated under Chapter 7 (Professional Engineers Act) of the B&P Code, including rules and regulations (CCR Title 16, Division 5) and any related sections of the B&P Code, Government Code, Penal Code, and/or Evidence Code. The Discharger shall fully comply with all aspects of existing statutes and regulations regarding the practice of geology and/or engineering while satisfying the Terms and Provisions of this Order.

I) Signatory Requirements

All required technical reports, inspection reports, certifications, and other reports prepared in accordance with the Terms and Provisions of this Order submitted to the Regional Water Board shall be signed by the Discharger or the Discharger's duly authorized representative(s). All persons signing a document under this provision shall make the following certification:

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete.”

- J) Failure to comply with the terms of this Order can result in civil liabilities of up to \$5,000 per day under Water Code section 13268(a)(b)&(d)(1), or misdemeanor prosecution under Water Code section 13268(c)&(d)(2).
- K) Any person affected by this action of the Regional Water Board may petition the State Water Resources Control Board (State Water Board) to review the action in accordance with Section 13320 of the California Water Code and Title 23, California Code of Regulations, Section 2050. The petition must be received by the State Water Board within 30 days of the date of this Order. Copies of the law and regulations applicable to filing petitions will be provided upon request. In addition to filing a petition with the State Water Board, any person affected by this Order may request the Regional Water Board to reconsider this Order. To be timely, such request must be made within 30 days of the date of this Order. Note that even if reconsideration by

the Regional Water Board is sought, filing a petition with the State Water Board within the 30-day period is necessary to preserve the petitioner's legal rights. If you choose to appeal this Order, be advised that you must comply with this Order while your appeal is being considered.

Ordered by:

Catherine Kuhlman
Executive Officer

September 29, 2006