

**STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION**

STAFF REPORT FOR REGULAR MEETING OF MARCH 18, 2010

Prepared on February 11, 2010

ITEM NUMBER: 9

**SUBJECT: Individual Conditional Waiver of Waste Discharge Requirements for
Timber Harvesting Plan 1-08-018 SCR Young, Santa Cruz County -
Order No. R3-2009-0063**

KEY INFORMATION

Harvest Type: Selective Harvest – Timber Harvesting Plan

Project Area 41 acres **Watershed** Bear Creek

Harvest Area 41 acres **Subwatershed** Starr Creek

Water Courses Class I 100 feet
(Class and Length) Class II 1,550 feet **Forester** Gary Paul, RPF
Class III 1,650 feet

Eligibility Criteria Tier IV **Landowners and Discharger** Norman, Helen, Anne,
and Cathy Young

This Action: Adopt Order No. R3-2009-0063

SUMMARY

Staff recommends the Central Coast Water Board (Water Board) adopt an Individual Conditional Waiver of Waste Discharge Requirements for Timber Harvesting Plan (THP) 1-08-018 SCR Young in Santa Cruz County. Site conditions where the Discharger proposes to harvest timber in accordance with this THP require intensified oversight and monitoring to help prevent excessive sediment erosion and temperature gains in an impaired watercourse, Bear Creek. The proposed Order therefore requires the Discharger to intensively monitor its timber harvest operations, and to maintain and to immediately repair failed erosion control measures. Based on results of site inspection and consideration of other relevant factors, staff removed recommendations for turbidity and temperature monitoring requirements that were in the draft monitoring and reporting program. Staff finds the proposed management practices, mitigation measurements, requirements for immediate corrective actions in the event of practice failure or sediment release, oversight and visual and photo monitoring will adequately protect beneficial uses in Bear Creek. Staff plans to inspect the site again after harvest to verify if the Discharger adequately implemented erosion control measures. Staff recommends the Water Board adopt proposed Order No. R3-2009-0063.

BACKGROUND

Basin Plan, 303(d) list, TMDL. The Water Quality Control Plan for the Central Coast Region (Basin Plan) assigns beneficial uses to Bear Creek, including Wildlife Habitat (WILD), Cold Fresh Water Habitat (COLD), Migration of Aquatic Organisms (MIGR), and Spawning Reproduction and/or Early Development (SPWN).

The Starr Creek watershed is a sub-watershed of Bear Creek, which drains to the San Lorenzo River. On February 19, 2004, the Water Board adopted Resolution No. R3-2002-0063: the *San Lorenzo River (including Carbonera Creek, Lompico Creek, and Shingle Mill Creek) Sediment Total Maximum Daily Load (TMDL) Basin Plan Amendment*. The Office of Administrative Law approved the TMDL on December 18, 2003, the effective date.

Section 303(d) of the 1972 federal Clean Water Act requires states to identify waterbodies that do not meet water quality objectives and/or do not support their beneficial uses. The Water Board added Bear Creek to the 303(d) list, citing sedimentation as the cause for its impairment. On June 28, 2007, USEPA gave final approval to the list. The Water Board has not yet adopted a TMDL resolution to address Bear Creek's impairment. However, the San Lorenzo River (SLR) Sediment TMDL's implementation plan depends on sediment discharge control in tributary watersheds such as Bear Creek and a tributary, Starr Creek. Therefore, consistent with the SLR TMDL, the proposed Order requires the Discharger to implement erosion control measures in the Starr Creek watershed to prevent sediment loading from this timber operation.

General Timber Order. On July 8, 2005, the Water Board adopted Order No. R3-05-0066: *General Conditional Waiver of Waste Discharge Requirements – Timber Harvest Activities in the Central Coast Region* (General Timber Order).

At its July 10, 2009 public meeting, the Water Board agreed with staff's proposal to revise the Notice of Intent (NOI) to increase its applicability and efficiency. The changes shifted responsibility for using the "Eligibility Criteria" procedure discussed below to the Discharger from staff and required the dischargers to submit this information earlier so staff could prioritize their review, inspections and evaluations of timber harvest operations with the most significant threat to water quality. To verify whether dischargers correctly employ the procedure, staff evaluates whether dischargers use correct information. The Water Board also agreed with staff's proposal to reduce monitoring; staff's review of data from several years showed most properly operated timber harvests did not impair beneficial uses of watercourses. Also, during that review, staff determined that inspections, reporting, and correction of management practices more effectively protected beneficial uses than instream turbidity and temperature monitoring. However, the Executive Officer may require additional monitoring on a case-by-case basis.

General Timber Order Condition No. 1.b requires a discharger proposing to harvest timber in the Central Coast Region to submit a NOI for review by the Executive Officer (EO). The NOI requires dischargers to use the EC to evaluate a proposed timber harvest's threat, mainly posed by soil erosion, to the beneficial uses of streams on the harvest site. The Eligibility Criteria procedure is a numerical procedure that ranks each proposed timber harvest's threat to water quality by considering factors specific to each project. The factors considered include the extent the project may disturb site soils (the Soil Disturbance Factor), its likely contribution to cumulative adverse effects on the watershed's water quality (the Cumulative Effects Ratio), and the number and type of streams in the proposed harvest area (the Drainage Density Index). The Water Board's website provides the Eligibility Criteria procedure as an interactive spreadsheet into which a discharger enters information specific to the harvest site and THP. Dischargers then print the results and attach them to the NOI for EO review.

The Eligibility Criteria procedure assigns each plan to one of four monitoring tiers. The first three tiers specify monitoring requirements for plans eligible for enrollment under the General Timber Order. When a plan is assigned to Tier IV, it is ineligible for the General Timber Order. For Tier IV projects, staff drafts an Individual Conditional Waiver of Waste Discharge Requirements Order (Individual Timber Order).

Proposed Project. On August 3, 2009, the Discharger submitted a NOI for the Young THP, which describes a selective harvest of 41 acres in the Starr Creek Watershed. The NOI includes a complete Eligibility Criteria procedure and a geology report, which discusses soil erodibility and measures to stabilize erodible sites. The Eligibility Criteria procedure determined that the Young THP requires Tier IV monitoring under an Individual Timber Order. Draft Order No. R3-2009-0063 (Attachment 1) is an Individual Timber Order.

This Individual Timber Order's Condition No. 1.c requires the Discharger to obtain approval from the California Department of Forestry and Fire Protection (CalFire) for the proposed project. On March 18, 2009, CalFire approved the 1-08-018 SCR Young THP.

The proposed harvest, which is in the Starr Creek watershed, covers less than one-half percent of the 10,392 acres in the Bear Creek Watershed. Approximately 16 percent of the watershed has been selectively harvested within the last 15 years. The THP describes around 5,000 feet of road, 2,300 feet of skid trails, and five landings. The THP also describes five Starr Creek road crossings.

DISCUSSION

Bear Creek contains runs of steelhead trout, a 'threatened' species in accordance with the federal Endangered Species Act. Steelheads rely on clean gravel in stream bottoms to spawn. If storm runoff is allowed to erode excessive amounts of earthen materials from exposed land surfaces, the sediment can clog gravel beds. The fish cannot use gravels so clogged for spawning. The Order's goal is to help ensure the proposed harvest does not cause excessive erosion, a possible factor in the decline of this species.

To minimize erosion from the site, the Discharger proposes to harvest timber using a combination of ground-based tractor, rubber-tired skidder yarding and forwarding, and skyline cable harvesting. When correctly employed, these practices for transporting sawlogs from harvest sites reduce the extent and magnitude of soils disturbed by logging operations.

The THP plans to use 1,600 feet of an existing road and to build 1,100 feet of new temporary road to the ridge top to install the cable yarder there. The road crosses Starr Creek at several locations. All the crossings are unprotected fords of varying conditions. The road drains poorly and soil continually erodes from it. To allow future use, control erosion, and support logging equipment, the THP proposes to upgrade the road section leading to a water intake structure. A permanent rock ford will be installed at the lowest Starr Creek crossing and the remaining crossings will be removed when harvesting is complete. The Discharger will install erosion control measures to control runoff of fine-grained sediment; the measures will include frequent cross-drains, mulch, and straw rolls. Also, when harvesting is complete, the Discharger will abandon the new road to the ridge by removing road materials, installing water breaks, and mulching road sections within the protection zone.

The Young THP is the sixth that staff has designated as Tier IV based on application of the Eligibility Criteria (Attachment 2). Staff and the discharger computed that the THP poses a high threat to water quality based on all three factors. The Eligibility Criteria procedure's Cumulative Effects Ratio was 16 percent; any ratio above 15 percent is considered a high threat. The Eligibility Criteria assigned the harvest area a high Drainage Density Index due to the numerous perennial and ephemeral streams in and near the plan area. The Eligibility Criteria procedure calculates the Drainage Density Index by comparing the length and types of streams with the size of the proposed harvest area. The Young THP Drainage Density Index is 123; the Eligibility Criteria procedure considers any index above 100 to be high.

A major contributor to the Young THP's Tier IV designation is the high Soil Disturbance Factor, which resulted from the THP's proposed 5,000 feet of roads and 2,300 feet of new skid trails. The harvest area would contain approximately 120 feet of new road per acre and 56 feet of new skid trail per acre. Plans enrolled under the General Timber Order average 63 feet of road per acre and 71 feet of skid trail per acre. Finally, the number of proposed landings is substantially higher than average per acre. The Young THP proposes approximately 3.2 landings per 10 acres compared to the average 0.6 landings per 10 acres in plans enrolled under the General Timber Order.

The length of new roads and skid trails proposed for this relatively small site indicate an increased potential for excessive soil disturbance and erosion both during and for a long time after the harvest. Moreover, the number of landings exceeds the average by six times, which also emphasizes the need to provide adequate long-term site stabilization.

Therefore, staff proposes conditions in the Individual Timber Order (Attachment 1) and a Monitoring and Reporting Program (MRP, Attachment 2) for Water Board consideration. Conditions include the following: for the term of the Order, the Discharger shall:

- Develop a long-term road inventory and erosion control inspection and maintenance program (road program). The road program must outline how the discharger will utilize, inspect, and maintain the road system and associated timber harvest infrastructure for the long-term protection of water quality. Long-term means 15 years from the acceptance of the CDF Work Completion Report, or until the next Timber Harvesting Plan is implemented, whichever comes first.
- Conduct visual and photo monitoring.
- Take immediate action to repair failed crossings, culverts, roads and other sources of sediment as soon as possible (including photo-documentation and reporting), maintain all erosion and sediment control devices, management measures and mitigations prescribed in the THP.
- Monitor and report on road conditions including stability and the number and state of repair of road erosion controls.
- Notify the Water Board concurrently when notifying CalFire of Commencement of Operations.

Monitoring to evaluate the effectiveness of erosion control measures includes visual observation of roads, watercourse crossings, landings, skid trails, water diversions, watercourse confluences, known landslides, and mitigation sites in the THP area. Such monitoring also includes photo-monitoring and forensic monitoring. Visual and photo monitoring are triggered by storm-events. The MRP identifies all monitoring locations.

Monitoring begins at the onset of timber harvest operations and ends when the MRP is revised or rescinded. The Discharger must submit annual reports to the Water Board by November 15

of each year. The Discharger must notify the Water Board within 72 hours of a significant erosion event and submit reports within ten days of these events that includes a description of the sediment release, impact to water quality, actions to correct the problem, or non-compliance with the conditional waiver requirements.

As found by the Water Board on July 10, 2009, based on the Board Meeting Staff report for Item No. 15, *Regulation of Timber Harvest Activities in the Central Coast Region*, visual inspections are effective at indicating proper function and effectiveness of sediment control practices and site management; visual inspection is more likely than water column turbidity grab sampling to trigger improved sediment control or to determine the location or nature of a failed or ineffective control structure or practice. Therefore, the proposed MRP requires the Discharger to conduct visual inspections based on monitoring and reporting protocols that ensure the Discharger will repair failed or ineffective management practices, such as a breached water bar, before occurrence of a sediment discharge.

Based on the results of staff inspection of the site of the proposed timber harvest and additional review of the THP, the proposed MRP does not require the Discharger to conduct temperature or turbidity monitoring. During the inspection, staff found no water in Starr Creek although the day of the inspection followed soon after a large rainfall event. Staff inferred that Starr Creek likely contributes little to no flow, even during winter months, relative to the much larger flows in Bear Creek so has little to no affect on Bear Creek's temperature or turbidity during normal conditions. Therefore, provided the Discharger implements and maintains adequate erosion control measures during and after the proposed timber harvest, timber harvest operations will have no impact on temperature in Starr or Beard Creek and sediment is unlikely to be discharges to Starr or Bear Creek. Even in the event that some sediment is released into Starr Creek, its low flow is highly unlikely to mobilize sediment and transport it to downstream to Bear Creek.

Consistent with the staff report presented to the Board on July 10, 2009, staff bases its approach to achieving the Water Board's goal and duty of protecting the beneficial uses of Starr Creek and Bear Creek on inspections of erosion control measures at the high priority timber harvest sites. Staff plans to inspect erosion control measures at these harvest sites shortly after dischargers complete harvests and before winter rains begin. Staff plans to also inspect these sites well after harvests to ensure dischargers maintain erosion control measures.

At each post-harvest inspection, staff answers a number of questions from an inspection report form at each mitigation site specified in the approved THP. Staff enters the responses into a spreadsheet, which it can query to evaluate the success of or failure of erosion control measures, compliance with Orders, and effectiveness of program activities (e.g. inspection methods) at protecting beneficial uses. For example, a query of all the questions answered during all the inspections might be: "What is the percentage of "yes" answers to the question 'Is this water bar intact?'" Staff will then be able to report to the Water Board in the future on general conditions and compliance based on the answer to this question and other similar questions, which number around 30 to date. To date, staff has conducted three such inspections at other sites and plans to conduct post-harvest inspection at the timber harvest site governed by the proposed Order or if otherwise necessary.

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

CalFire is the lead agency with respect to CEQA. Accordingly, CalFire reviewed and considered recommendations by the interdisciplinary review team, including Water Board staff, on the Young THP. CalFire determined the plan conforms to the Forest Practices Act and

Board of Forestry Regulations, and found the timber operations will not have a significant adverse effect on the environment. The THP approval process is a certified regulatory program under CEQA. In accordance with CEQA, the Young THP serves as a substitute Negative Declaration for the timber harvest project. The Water Board is a responsible agency under CEQA and has considered the CEQA documents prepared by CalFire pursuant to its certified regulatory program. This Individual Timber Order incorporates requirements for the protection of water quality consistent with the Water Board's authority under the Water Code.

COMMENTS AND STAFF RESPONSES

Gary Paul, Consulting Forester

1. The Draft MRP is contrary to the Board's intent as indicated in its Order of July 10, 2009. At that meeting, the Board eliminated requirements for photo, turbidity, and temperature monitoring for all plans enrolled in the General Waiver, including those covered by an Individual Waiver (Tier IV).

Staff Response At the July 10, 2008, public hearing, the Regional Board agreed with staff's proposal to eliminate water column turbidity and temperature monitoring for timber harvest plans ranked from Tier 1 through Tier III. The Regional Board did not eliminate such monitoring for timber harvests assigned to Tier IV, although staff may propose to reduce monitoring for individual timber harvests.

2. As to the photo-monitoring requirement in the draft MRP, staff site inspections would be more useful and less time consuming for staff and Mr. Paul. In particular, the repeated photos of sites of the road reconstruction at 50-foot stations would provide no exact information on the road's stability as a whole.

Staff response Photo-documentation provides general information on the stability of restored roads, skid trails and other potential sources of eroded sediment. Therefore, staff proposes to retain the photo-documentation requirement included in the proposed Order.

3. We have learned over the past six years of monitoring required by the Board, that turbidity grab samples have shown that properly mitigated timber harvests do not result in elevated turbidity levels in local streams. We have also learned that timber harvesting, as practiced in the Santa Cruz Mountains, does not lead to increased temperature levels in local streams. In fact, due to the high level of canopy in this area, no streams are 303d listed as impaired for temperature.

Staff response Staff concurs. In the winter of 2009-2010, staff inspected timberlands where dischargers had completed harvests in accordance with THPs and installed post-harvest erosion control measures. Several inches of rain had fallen a few days before two inspections at sites where water ran off continually from the roads and landings into the surrounding natural vegetated areas. Since the erosion control measures – including water bars and swales, rock fords and culverts, slash-covered skid trails, and reseeded landings – removed runoff quickly from roads, skid trails, and landings and protected them, staff found them to be stable. The timberlands appeared to be insignificant contributors of eroded sediment to watercourses. Surface water quality appeared to be excellent.

4. As to this site in particular, Starr Creek is an intermittent and very small tributary to the greater Bear Creek system. The drainage area involved on the site is 80 acres, which flows into a greater 10,392 acre watershed. This is less than 1% of the watershed area. Even

slightly increased levels of turbidity or temperature, which are not anticipated due to the rigorous mitigation measures to be applied at this site, would not be significant.

Staff response Staff inspected the proposed harvest site in December 2009, accompanied by the forester, who discussed road construction proposed for the site. As described in the Staff Report, the extent of road construction places the Soil Disturbance Factor into the high risk range; that is, road construction in the steep site increases the threat of excessive erosion if the Discharger fails to install adequate control measures, including complete removal of temporary roads and correct installation of adequate permanent creek-crossing structures. Post-harvest staff inspections will determine if the Discharger adequately installed the requisite measures.

The proposed Order requires the Discharger to implement a long-term roadway inspection and maintenance program dedicated to controlling erosion of sediment. The Discharger shall submit the program with the annual reports. The proposed Order also requires the discharger to take immediate action to repair failed sources of sediment as soon as practicable; such works include, but are not limited to, culverts, crossings, and roadways.

5. In addition, the water flow in the summer at this site is intermittent and miniscule. There is not likely to be water flow at sufficient depth, so as to provide enough water to submerge a hobo temp. This furthers the argument that this tributary does not provide enough flow of any sort to result in any significant effects to downstream beneficial uses of Bear Creek.

Staff response Comment noted. See comment # 4, above. Staff observed these low flow conditions in Starr Creek during the inspection in December 2009. Timber harvest conducted in accordance with the approved THP shall ensure the canopy remains sufficiently dense to prevent temperature increase in Starr Creek's waters. Protection of vegetation to prevent temperature increases and the low flow in Starr Creek will result in maintenance of beneficial uses in Bear Creek.

6. I would submit that visual monitoring is appropriate for this site, and that staff inspection soon after the mitigation measures are completed, and during the first winter, would be much more useful than any proposed photo, turbidity, and temperature monitoring.

Staff response Staff concurs that turbidity and temperature monitoring would provide little useful information on this timber harvest and is unnecessary. Staff recommends the Board retain visual and photographic monitoring by the discharger to provide evidence and reporting that allows staff to evaluate compliance in conjunction with inspections. Staff commits to post-harvest inspections to determine whether the proposed erosion control measures are adequate.

RECOMMENDATION

Staff recommends the Water Board adopt Order No. R3-2009-0063, *Individual Conditional Waiver of Waste Discharge Requirements, and Monitoring and Reporting Program No. R3-2009-0063 for proposed Timber Harvesting Plan 1-08-018 SCR Young*.

ATTACHMENTS

1. Proposed Order and Monitoring & Reporting Program Order No. R3-2009-0063.
2. 1-08-018 SCR Young Eligibility Criteria.

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