

F O R E S T L A N D
M A N A G E M E N T

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CENTRAL VALLEY REGIONAL WATER QUALITY CONTROL BOARD
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RE: Waste Discharge Requirements General Order
Comments to Proposal

Ms. Wilson,

The following are comments prepared by W. M. Beaty & Associates, Inc. to the California Regional Water Quality Control Board, Central Valley Region, Order R5-2017-0XXXX, Waste Discharge Requirements General Order for Discharges Related to Timberland Management Activities for Non-Federal and Federal Lands.

General Comments

Our comments are primarily related to pesticide use for post-fire reforestation activities. Reforestation and rehabilitation/restoration of burned areas is not the emergency; wildfires are the emergency. Efforts to reforest a burned area should be encouraged and facilitated to achieve long-term soil stabilization and re-establishment of native forests. The reforestation effort for burned areas is voluntary and the cost is incurred by willing landowners that may not see any financial return from this investment during their lifetime. The effort by the CVRWQCB to heavily and prescriptively regulate voluntary reforestation activities should be re-evaluated. The short-term impact of surface vegetation control versus the long-term gain of successful and effective reforestation with deep rooted conifers should be thoroughly considered.

The requirements in the General Order for Category 2A result in expensive over kill severe economic disincentive for landowners to reforest their lands after wildfire in what already has a negative or very low present net worth investment.

It appears that the long-term goal of the General Order is to eliminate conifers from watercourse protection zones and to reestablish these areas with brush and hardwoods and to discourage investment in reforesting the remaining watershed with conifers.

The Category 2A requirements are a one-size fits all response to a few problems that could be addressed in a much more focused, surgical manner. If there will be wide buffers with 100% cover, does 45% cover beyond the buffers on 35% slopes on typical forest soils hundreds or thousands of feet away from a buffered watercourse likely to contribute much sediment to a watercourse (beyond what naturally occurred due to the fire)? Is this one-size fits all rule worth the increased costs to an already negative investment?

The intent of Category 2A appears to be to prohibit the use of herbicides and incentivizes the use of non-chemical manual and mechanical weed control methods such as grubbing, terracing, and windrowing. These methods displace nutrient rich top soil, reduce soil fertility, result in greater soil disturbance, and reduced reforestation efficacy. Non-chemical vegetation control methods have been evaluated on forestland managed by W. M. Beaty & Associates, Inc. and quite extensively throughout regions with similar climates and forest types and consistently fail to achieve the desired results at an economically

viable level. Two of the more popular non-chemical methods are hand-grubbing and mulch mats. McDonald & Fiddler (1992), looked at over 40 vegetation management studies, 16 of which involved hand grubbing. Costs for complete grubbing in 1990 averaged \$410 per acre and ranged as high as \$2,000 per acre where repeat treatments were necessary. There were also several problems associated with grubbing, most notable is that it fails to control vegetation that sprouts or has rhizomes. Hand grubbing also needs to be done repeatedly to achieve adequate levels of vegetation control. The studies also noted considerable soil displacement as a result of grubbing.

Hand grubbing trials on forestland managed by W. M. Beaty & Associates, Inc. (e.g. Squirrel Fire) showed costs of more than twice as much per treatment with several more treatments needed than the one chemical treatment that would have been needed. The hand grubbing yielded very short term results (rapid re-sprouting of brush and scarification of brush seed that led to germination of brush seedlings) and much higher negative impacts to the environment (loss of litter layer around seedlings, exposed top soil, and increased erosion). Negative impacts to worker safety included dust inhalation and greater risk of physical injury from scalping tools.

An extensive literature review of non-chemical vegetation control methods in forestry was conducted by Thunder Road Resources for the Certified Forest Research Group in 2010. The findings indicate that the use of manual methods in forestry is limited at best. Cost, efficacy, and safety are all potentially prohibitive concerns. Reductions in vegetative cover from the majority of these methods are short-term gains at best and the treatment usually needs to be repeated multiple times to be effective. Public acceptance of these methods appears to be based mainly on perception (E. Fredrickson, 2010).

Numerous studies have been conducted on the efficacy and effect of herbicide treatment after wildfires. A study was published in California Agriculture, Volume 51, Number 1 titled "Post-Fire Herbicide Sprays Enhance Native Plant Diversity" by Joe DiTomaso, Daniel Marcum, Michelle Rasmussen, Evelyn Healy, and Guy Kyser (<http://ucanr.edu/repositoryfiles/ca5101p6-67646.pdf>). This study found that: Following catastrophic fire, broad-spectrum herbicides such as hexazinone are often used to control shrubs and forbs that compete with planted conifers. This practice encourages rapid growth and reduces mortality of conifers. Although the initial effect is to reduce native plant species richness, recovery is rapid and plant diversity exceeds that in untreated areas within 8 years of application. Success of native forb and grass species in herbicide-treated areas appears to be due to early suppression of otherwise dominant shrubs.

General Order

Scope of Coverage

Item 2.: Timberland management activities as defined in this section appear to be all inclusive and incorporate noncommercial activities. However, Attachment A includes an exclusion for Notices of Exemption which is inconsistent with the inclusion of Exemptions in Table 1.

III, Table 1. Summary of Timberland Management Activity Categories and Requirements

Category 1 includes EX Notices which is in conflict with the exclusion of CCR, Title 14, Section 1038 Exemptions in the definition of Timberland Management Activities in Attachment A.

III.B. Category 1: Low Threat Exemption and Emergency Notices on Non-Federal Lands

The header of this section implies that all other activities including fire salvage and reforestation are “high threat” which is certainly not the case. Salvage and reforestation under Category 2 is restorative and should not be conveyed as a high threat.

III.C.3.a

Although the Erosion Site Table must be submitted within 30 days of Emergency Notice acceptance, are operations allowed to commence upon acceptance of the Erosion Site Table and without a review period?

III.C.3.b

Provide justification/basis for the standard pesticide buffers that the Post Fire Management and Reforestation Plan measures must meet or exceed.

The requirement to comply with item i. or ii is problematic. The conditions in item ii are so restrictive such that equal to or better protection is difficult or impossible to achieve in the short term. The requirement to achieve and document 50% average affected groundcover prior to pesticide application is severely restrictive to effective reforestation and unnecessary.

Retention of 50% effective groundcover encourages retention of excessive fuel loading which is counterproductive to establishment of a healthy and fire resilient forest. Site preparation activities are often the only opportunity in the life of the re-established forest to control ground fuels. Retention of vegetation to achieve all or part of the 50% effective ground cover is counterproductive to successful reforestation in California’s Mediterranean climate. Vegetation competes aggressively for limited soil moisture resulting in conifer seedling mortality and the failure of reforestation efforts. The Post Fire Management and Reforestation Plan incentivizes landowners to allow sites to revegetate prior to initiating site preparation, which will result in increased ground disturbance, potential soil erosion, and top soil displacement from subsequent mechanical removal of established vegetation as well as increased quantities and applications of pesticides to control older well-established vegetation and greatly reduced reforestation effectiveness and conifer survival.

III.C.3.c.iii

Clarification of “any and all riparian vegetation” is needed. Is the intent to include the vegetation within watercourse and lake protection zones, equipment limitation zones, and/or no-spray buffers? What distance from watercourses, lakes, wet meadows, and wet areas is encumbered by this restriction? Who determines “to the extent feasible”? Consider changing requirement to “retention of existing vegetation within California Forest Practice Rule watercourse and lake protection zones to the extent feasible as determined by the RPF or PCA”.

Attachment A: Definitions

1. Timberland management activities: The description in the General Order under Scope of Coverage should be revised to exclude Title 14 CCR § 1038 Exemptions from this definition.

3. Effective Groundcover: Consider expanding the definition to include needles and leaves.

8. Significant Existing or Potential Erosion Site: Consider linking “in quantities that violate a water quality objective (narrative or numeric) to the Basin Plan.

Attachment B: Monitoring and Reporting Program

I. Inspection Plan

Identify the rationale for the 100-acre threshold. Why not 1,000 acres or other threshold that includes parameters for soil type, slope, proximity to watercourses, etc.?

Visual Monitoring Points: The list of inspection items suggest that all occurrences of these features shall be included in the inspection plan and delineated on the monitoring points site map. Clarification is needed on this for projects that have a high number of these features.

III.B. Implementation Monitoring

If the intent is to monitor a sample of representative sites for each type of feature in the list, please so state. The “note” at the end of this section regarding additional implementation monitoring should apply to all types of monitoring (not just implementation monitoring).

IV. Incident Report

Consider changing the phrase “report to” in the text to “notify the”.

C. Submission of Reports/Data

The sentence “I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment” is unnecessary and degrading.

What is the authority of the CVRWQCB to require that “[t]he Discharger shall also report monitoring data and results, in a timely manner, for all water quality related monitoring conducted independent of the requirement of this Order”?

Attachment C: Post-Fire Management and Reforestation Plan

Consider changing the title of this attachment to “Pesticide Management Plan” and removing all references to and discussion of salvage operations since it appears that the intent of this plan is primarily to address and manage pesticide applications.

Since the contents of a Post Fire Management and Reforestation Plan must be prepared by a Registered Professional Forester or Pest Control Advisor, will the CVRWQCB staff that reviews these plans be required to possess the same credentials to effectively review and evaluate the Post Fire Management and Reforestation Plan?

I. Flow Charts for Category 2A and 5A

This flow chart clearly discourages the use of pesticides. Reforestation without the use of herbicides has proven to be ineffective.

II. Pesticide Buffer and Effective Ground Cover Requirements

Effective Groundcover: Why restate the definition from Attachment A again in this section? Is visual determination of 50% ground cover a permitted methodology? Has there been an economic analysis of the time required to estimate and document the effective ground cover? What is the basis for the 50% effective ground cover? What is the basis for estimating down to 20 acres and 10 acres for high to severe burn severity? Is there a consideration of soil type? Is there a parameter to consider mechanical subsoiling and the benefits of salvage operations and the resultant disruption of hydrophobic soil layers prior to herbicide application?

III. Contents of a Post-Fire Management and Reforestation Plan

B.: Why are “other areas” required to adhere to the Post Fire Management and Reforestation Plan if they are not commercially salvaged and only voluntarily reforested?

C.: Evaluation of Receiving Waters and Beneficial Uses

A list of the beneficial uses, 303(d) listings, critical habitat, and aquatic resources is unnecessary, cumbersome, and costly to provide. It requires the preparer to regurgitate publicly available information for no purpose.

D. What is the purpose of describing the chemicals to be applied? This information has limited utility if the pesticide product in which a chemical is the active ingredient is not identified. How will this information be used and for what purpose?

Notice of Intent and Instructions for Completing Category 2A Fire Salvage – No Residence

The Notice of Intent is overly comprehensive and time consuming to prepare. The Notice of Intent is far more intensive than a Notice of Emergency Timber Operations and is much more of a plan that will take time to prepare which is counterintuitive to the intent of an Emergency Notice.

Geospatial file: Is inclusion of a geospatial file required, optional, or unnecessary?

Post-Fire EHR: Delete or indicate that inclusion of this information is optional since it is duplicative of the California Forest Practice Rules and not required to be provided with Emergency Notices.

Watercourses: Should Class IV watercourses be listed?

Erosion Site Table

GPS Coordinates: Delete column as this information is unnecessary when quality maps are provided in compliance with the mapping standards.

Sediment Discharge: Indicate in the column headers that these values are estimates. Delete “taped” measurements and allow ocular estimates.

Instructions for Completion of NOI for Category 2A Fire Salvage (No Residence)

Location: Delete requirement for providing a geospatial file. Delete requirements for providing average elevation, planning watershed name(s), and CalWater number(s) as this is not a requirement of the Emergency Notice process.

Erosion Hazard Rating: Delete or indicate that inclusion of this information is optional since it is duplicative of the California Forest Practice Rules and not required to be provided with Emergency Notices.

Roads: Should deactivated roads be included here?

Erosion Site Table and Crossing Information

GPS Coordinates: Delete column as this information is unnecessary when quality maps are provided in compliance with the mapping standards.

Past and Potential/Future Sediment Discharge: Delete requirement for “taped” measurements.

Map(s)

EHR: Delete or indicate that inclusion of this information is optional since it is duplicative of the California Forest Practice Rules and not required to be provided with Emergency Notices.

We hope these comments are constructive to the process of preparing the General Order and appreciate the opportunity to provide input. Further refinement and discussion of the General Order is warranted to ensure that successful reforestation of areas impacted by wildfire are allowed to be successfully implemented. Field tours of a broad array of successful reforestation project sites should be conducted that include foresters that have decades of experience in successfully reforesting after wildfires to review the results. A review of literature on reforestation and herbicide use and discussion with resource professionals experienced in post-fire salvage and reforestation is essential to development of a workable General Order.

Sincerely,

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