CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LAHONTAN REGION

ORDER NO. R6T-2010-(TENTATIVE)
WDID 6A09_____

WASTE DISCHARGE REQUIREMENTS (WDRs)

FOR

UNITED STATES FOREST SERVICE
LAKE TAHOE BASIN MANAGEMENT UNIT

SOUTH SHORE FUEL REDUCTION
AND HEALTHY FOREST RESTORATION PROJECT

_____El Dorado County_____

A. FINDINGS

WHEREAS the California Regional Water Quality Control Board, Lahontan Region (Water Board) finds:

1. Project. The U.S. Forest Service (USFS), Lake Tahoe Basin Management Unit (LTBMU) submitted a project description, a draft environmental document, and other information for the South Shore Fuel Reduction and Healthy Forest Restoration Project (Project). The Project may also be referred to as the Facility. The term "Project" also refers to the Project-specific staging areas, storage areas, and access roads for equipment and materials.

2. Discharger. For the purposes of these Waste Discharge Requirements (WDRs), the LTBMU is considered the Discharger.

3. Regulated Wastes. The specific types of discharges of waste these WDRs regulate include, but are not limited to, earthen materials (such as soil, silt, sand, clay, and rock), organic materials (such as slash, sawdust, bark, and ash), oils and greases, and herbicides, resulting from timber harvest and vegetation management activities.

4. Project Purpose. The Discharger's South Shore Project is intended to reduce fuel hazards and restore ecosystem health through vegetation treatments on lands owned by the United States of America and managed by the U.S. Forest Service. The primary management objective is the reduction of hazard fuels within the South Shore of the Lake Tahoe Basin wildland urban intermix (WUI) in order to change fire behavior resulting in lower fire severity and reduced rates of spread. Secondary objectives include providing healthy wildlife habitat and restoration of a forest structure with increased resistance to drought, disease, and insects. The Project will apply vegetative treatments to reduce hazardous fuels on up to 10,671 acres within the South Shore WUI on a minimum four to five-year schedule, with initial treatments

on approximately 2,500 acres per year. It is anticipated the Project area would remain within desired condition limits for a period of 15 to 20 years. Hazardous fuel reduction would occur on Forest Service-managed lands in all three zones of the WUI: within the urban core where undeveloped public and developed private lands are adjacent; within the Defense Zone where undeveloped public lands extend ¼ mile from places where people live and/or work; and within the Threat Zone where undeveloped public lands extend 1.5 miles beyond the Defense Zone.

A combination of the following methods will be used to meet the fuels and vegetation objectives for the Project area, including Stream Environment Zones (SEZs):

- Mechanical thinning of brush and trees, using Cut-to-Length (CTL) or whole-tree operations (WT). WT logging equipment will not operate within SEZs; however, WT equipment may be used to endline whole trees from SEZs.
- Hand thinning of brush and trees.
- Saw log and biomass removal, with chipping and/or masticating of slash and brush.
- Removing infested, diseased, and dead trees, both standing and down, that are in excess of wildlife and soils retention needs.
- Prescribed pile burning and underburning subsequent to vegetation treatments.

The thinning operations used will be based on soil type, slope, and associated water quality concerns such as risk of sediment delivery to surface water. Hand treatments, end-lining, or reaching in by equipment would be used where slopes or soil conditions are not suitable for mechanical treatments and where road access is not feasible. Overall, mechanical harvesting using ground-based equipment with follow-up biomass removal, chipping, mastication, or prescribed burning, would occur on up to 5,828 acres. Hand thinning with similar follow-up fuels treatments would occur on up to 5,962 acres (acreage differences from the above total are due to management differences described in the Alternatives proposed in the Discharger's Draft Environmental Impact Statement). Best Management Practices (BMPs), mitigation measures, and a Monitoring Plan are incorporated into the Project description and in these WDRs to avoid or substantially lessen adverse environmental impacts.

5. Regulatory Authority and Reason for Action. The drainages and wetlands affected by the Project are waters of the State, as defined by section 13050 of the California Water Code (CWC), and are therefore subject to State requirements in accordance with section 13260 of the CWC.

   The Project involves the proposed discharge of earthen wastes (fill) and/or waste organic materials (e.g., slash, chips, bark, burn piles, etc.) to all or portions of approximately eighteen natural waterbodies in the Project area, including wetlands (Finding No. 7). The Project also involves the potential discharge of wastes to surface waters from ground-disturbing activities and/or mechanical equipment use. The Water Board will regulate the proposed discharge of fill material, including structural material and/or

earthen wastes, into wetlands and other waters of the State by WDRs issued pursuant to Section 13263 of the CWC. The Water Board considers WDRs necessary to adequately address potential and planned impacts to waters of the State from this project, to require mitigation for these impacts to comply with the water quality standards specified in the *Water Quality Control Plan for the Lahontan Region* (Basin Plan).

6. Project Location. The Project extends from Cascade Lake on the northwest to the Heavenly Mountain Resort Special Use Permit boundary and the Nevada State line on the northeast, and from Lake Tahoe on the north to the Discharger's National Forest boundary on the south. The overall Project area totals 86,790 acres, of which 70,581 acres are managed by the Discharger. The Discharger proposes vegetative treatments only on National Forest System lands within the WUI and its zones. The Defense Zone comprises 60 percent of these available National Forest WUI acres, the Threat Zone 35 percent, and the remaining five percent is the Urban Core.

7. Hydrologic Areas. The Project area incorporates surface waters within the Lake Tahoe Hydrologic Unit (HU), as defined in the Basin Plan, specifically within the South Tahoe Hydrologic Area (HA), which drain into Lake Tahoe. The following watersheds, as designated in the Draft Environmental Impact Statement / Environmental Impact Report (DEIS/EIR), have areas within the South Tahoe HA proposed for treatment under this Project. Basin Plan hydrologic subunits which incorporate or are incorporated within the DEIS/EIR watersheds are noted italicized in parentheses.

   (a) Angora Creek (*Upper Angora Lake, Lower Angora Lake*)
   (b) Benwood Meadow (*Upper Truckee River*)
   (c) Big Meadow Creek (*Upper Truckee River*)
   (d) Bijou Frontage (*Tahoe Meadows Wetlands*)
   (e) Camp Richardson Frontal (*Pope Marsh/Wetlands*)
   (f) Cascade Creek (*Cascade Lake, Cascade Creek*)
   (g) Cold Creek (*Cold Creek*)
   (h) Echo Creek (*Echo Lakes, Upper Truckee River*)
   (i) Glen Alpine Creek (*Glen Alpine Creek*)
   (j) Grass Lake (*Grass Lake Wetlands, Grass Lake, Grass Lake Creek*)
   (k) Headwaters of Trout Creek (*Trout Creek*)
   (l) Lower Trout Creek (*Trout Creek*)
   (m) Lower Upper Truckee River (*Upper Truckee River*)
   (n) Middle Upper Truckee River (*Upper Truckee River*)
   (o) Osgood Swamp (*Osgood Swamp*)
   (p) Saxon Creek (*Saxon Creek*)
   (q) Tallac Creek (*Tallac Creek*)
   (r) Taylor Creek (*Fallen Leaf Lake, Taylor Creek, Taylor Creek Meadow Marsh*).

   Proposed Project treatment areas only occur along parts of the WUIs within a watershed. Consequently, not all of the above Basin Plan hydrologic subunits will have treatments within them (e.g., Tahoe Meadows Wetlands, Pope Marsh/Wetlands). Additionally, one proposed treatment unit drains into the headwaters of the South Fork of the American River, which is not within the jurisdiction of the Lahontan Water Board. Of

the 840 miles of streams within the Project area, the Discharger proposes to reduce fuels along 76 miles of ephemeral streams, 1 mile of intermittent streams, and 21 miles of perennial streams.

Existing Water Quality Conditions. Ambient water quality monitoring throughout the Lahontan Region has been reported in the Water Board's 2007 *Surface Water Ambient Monitoring Program (SWAMP) at the Lahontan Region: Summary of Results for Years 2000–2005*:

> "Chemical and bacteriological monitoring was conducted by the U. S. Geological Survey (USGS) at 30 surface water sites throughout the Lahontan Region from 2000–2005. The results indicate that surface waters at the monitored sites are generally of high quality. However, some potential exceedances of State water quality standards (i.e., Basin Plan objectives) were observed."
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> "The highest rates of potential exceedance were documented for total dissolved solids (TDS) and dissolved oxygen (DO). The causes and significance of the potential exceedances for these parameters remains unknown. Potential exceedances of other Basin Plan objectives were relatively rare."

8. The 2009 Clean Water Act (CWA) Sections 305(b) and 303(d) Integrated Report for the Lahontan Region (Integrated Report) describes Water Board's regional water quality assessment process, including analysis of data and information, and recommendations for the additions, deletions, and modifications to the 2006 CWA section 303(d) list (303(d) list) of impaired waterbodies and Total Maximum Daily Loads (TMDLs) completion dates. Water quality monitoring data was submitted by stakeholders (including the Discharger) and from Lahontan's Surface Water Ambient Monitoring Program (SWAMP). The updated Integrated Report, approved by the Water Board in July 2009, provided the basis for adding Cold Creek and delisting pathogens as a stressor in Big Meadow Creek and Upper Truckee River from the 303(d) list.

   The 2009 303(d) list of water quality limited segments requiring TMDLs includes the following streams/lake specifically within the Project area as impaired (Stream: pollutant – stressor - pertinent potential sources):

   Cold Creek:
   - Total Nitrogen as N – agricultural water diversion – this listing is being addressed by a USFS restoration project.

   Heavenly Valley Creek (USFS boundary to Trout Creek):
   - Chloride – atmospheric deposition, highway/road/bridge runoff, natural sources, unknown source.
   - Sedimentation/siltation - construction/land development, habitat modification, hydromodification, non-point source, recreational and tourism activities (non-boating).

Heavenly Valley Creek (source to USFS boundary):

- Chloride – atmospheric deposition, highway/road/bridge runoff, natural sources.
- Phosphorus – atmospheric deposition, erosion/siltation, natural sources, recreational and tourism activities (non-boating).
- Sedimentation/siltation – unknown source. This listing is being addressed by an adopted TMDL and through individual WDRs imposed on Heavenly Ski Area.

Lake Tahoe:

- Nitrogen – silviculture, runoff (other urban, surface, erosion and sedimentation), roads, channel erosion, atmospheric deposition, natural sources.
- Phosphorus – silviculture, runoff (other urban, erosion and sedimentation), roads, channel erosion, atmospheric deposition, sediment re-suspension, natural sources, nonpoint sources.
- Sedimentation/siltation - silviculture, runoff (other urban, erosion and sedimentation), roads, channel erosion, atmospheric deposition, sediment re-suspension, natural sources, nonpoint sources.

Tallac Creek (below Hwy 89):

- Pathogens – grazing.

Trout Creek (above Hwy 50):

- Iron – urban runoff, erosion/siltation, natural sources.
- Nitrogen – urban runoff, erosion/sedimentation, atmospheric deposition.
- Pathogens – source unknown.
- Phosphorus - urban runoff, erosion/sedimentation, atmospheric deposition.

Trout Creek (below Hwy 50):

- Iron – urban runoff, erosion/siltation, natural sources.
- Nitrogen – urban runoff, erosion/sedimentation, atmospheric deposition.
- Pathogens – grazing.
- Phosphorus - urban runoff, erosion/sedimentation, atmospheric deposition.

Upper Truckee River (above Christmas Valley):

- Iron – natural sources.
- Phosphorus – silviculture, natural sources.

Upper Truckee River (below Christmas Valley):

- Iron – erosion/siltation, natural sources, unknown nonpoint source.
- Phosphorus – silviculture, erosion/siltation, atmospheric deposition, natural sources, unknown nonpoint source.

9. Hydrology. Elevations in the Project treatment area range from 6,224 feet at lake level to approximately 8,000 feet near Luther Pass. Average annual precipitation ranges from approximately 20 to 60 inches (mostly in the form of snow) in the Lake Tahoe Basin

depending largely on elevation. Because of this, spring snowmelt gradually contributes the majority of the stream flow over an extended period. However, infrequent rain-on-snow events can affect the landscape and stream channels, and can contribute disproportionate amounts of runoff-carried pollutants to surface waters including Lake Tahoe.

10. Soils. Soils in the Project area developed from glacial and alluvial materials primarily derived from granitic rocks, with some metamorphic and volcanic rocks. Soils are generally coarse-textured, with coarse sand, loamy sand, and sandy loam surface layers. The "SEZ soils" are organic soils primarily derived from decomposed peat, have organic surface layers derived from decomposed plants, or are beach sands. Surface erosion has been identified in the Project area as the dominant erosional process. Trout Creek and the watersheds to the east have greater surface erosion potential than the other drainages, possibly due to their thicker layer of parent soil material. Fire suppression and conifer encroachment have been identified as the main causes of over-dense upslope forests which can alter water flows and soil moisture conditions, tying up more water in the upper watersheds. Additionally, the loading rates for finer particles from hillslopes are currently higher than they had been in the recent past, due to the connection of hillslope roads and trails to surface waters. In lightly and moderately burned areas from the 2007 Angora Fire, the fire resulted in short-term detrimental water quality effects including temporary loss of ground cover. In areas with high-intensity burns, ground cover was almost completely removed: nearly all vegetation, including streamside vegetation (necessary for shading and healthy stream temperatures) was lost, and large and small organic material were removed.

    The Discharger proposes treatments, including but not limited to, thinning of forests, removal of excessive ground fuels, stabilization of exposed soils, decommissioning of roads, avoidance of sensitive soils, and restoration of vegetation, which will restore proper hydrologic conditions and functions. Through soil evaluations and analyses, the Discharger has identified the sensitive soils within the Project area as those soils with severe or very severe limitations for mechanical harvest or a high hazard rating for erosion, rutting, or damage from wildfire.

11. Stream Environment Zones and Waterbody Buffer Zones. There are approximately 732 acres of SEZs within the Project treatment area. SEZs are defined as biological communities that owe their characteristics to the presence of surface water or a seasonally high groundwater table. The Tahoe Regional Planning Agency (TRPA) criteria used to delineate an SEZ include the presence of specific vegetation and soil types, plus hydrology. The dense vegetation of SEZs is capable of rapid nutrient uptake and incorporation, while the moist-to-saturated soils are conducive to denitrification. Studies of nutrient removal by SEZs have shown that:
    - Sheet flow across SEZs provides the most effective treatment of water;
    - The natural treatment capability of SEZs is destroyed where development causes channelization; and
    - Channelized SEZs may actually increase sediment and nutrient loading in areas where erosion is caused by concentrated flow.

    SEZs have been found to be very effective in removing nutrients and sediment.

However, during certain rainfall and snowmelt episodes and following the fall die-off of vegetation, SEZs may also be a source of nutrients and sediments to watercourses, especially where the SEZs have been disturbed. In addition to removing nutrients from storm water runoff, naturally-functioning SEZs can reduce flood peaks, diffuse flow, increase evapotranspiration, and increase the retention time of surface water. SEZs also have many other values related to water quality, such as scenic, wildlife, fishery, and vegetation values.

The Project soil survey limitations to equipment use noted in Finding No. 10, above, are different from the TRPA SEZ designations; however, both the soil survey and the SEZ designations are used in the Discharger's analysis of effects. The Discharger proposes, and these WDRs require, special design features for Project activities within SEZs and Waterbody Buffer Zones. However, many of the Discharger's proposed design features allow for undisclosed field decisions or do not provide adequate protection to the tributaries to Lake Tahoe (since they allow soil disturbance close to waterbodies during WT logging practices). The California part of Lake Tahoe is designated by the U.S. Environmental Protection Agency (EPA) as an Outstanding Natural Resource Water (ONRW), which provides that no further degradation of Lake Tahoe can be allowed. All reasonable, cost-effective, best-management practices for nonpoint source control are required. The Water Board finds that the proposed setbacks pose an unreasonable risk to water quality, including the avoidable delivery of nutrients and sediments to waters tributary to Lake Tahoe. Due to this, minimum WT logging set-backs are being imposed in these WDRs (Attachment F, BMP No. 15), using the same Waterbody Buffer Zones set forth in Attachment B of the 2009 Timber Waiver (R6T-2009-0029).

The Discharger proposes to limit work within SEZs to either hand crews, end-lining, over-snow logging, or using Cut-to-Length (low psi) equipment. As noted above, these particular design features, as proposed in the DEIS, also allow for undisclosed field decisions or do not provide adequate protection to the tributaries to Lake Tahoe. These WDRs therefore impose the specific BMPs and mitigation measures detailed in Attachment F, which supersede the design features and BMPs noted in the DEIS. Because certain construction design features could not be developed prior to issuance of these WDRs, the Discharger will develop and incorporate detailed BMPs for the construction, use, and removal of stream crossings in its Roads Package (and in the incorporated Storm Water Pollution Prevention Plan [SWPPP]), Project Plans, and, which is required to be submitted to the Water Board for review and acceptance before Project operations may commence. This will ensure that water quality will be protected during operations.

12. Monitoring Program. A Monitoring and Reporting Program (MRP) is designed to ensure that the Project management measures are installed and functioning prior to precipitation events (implementation monitoring), that the measures were effective in controlling sediment discharge sources (effectiveness monitoring), and that any new sediment sources occurring as a result of Project implementation are tracked down and corrected (forensic monitoring). The Water Board may require that any person who proposes to discharge waste within its region shall furnish, under penalty of

perjury, technical or monitoring program reports which the regional board requires (Water Code section 13267). All monitoring must be conducted by qualified professionals (i.e., a person with a bachelor's degree or higher in a biological, ecological, or other relevant science such as engineering, geology, soils, hydrology, botany, or fisheries and with the appropriate training and/or licensing to conduct site inspections and prepare technical reports associated with preventing or minimizing the discharge of waste to waters).

The Discharger developed a Project Monitoring Plan, incorporated in Chapter 4 of the DEIS. However, this Monitoring Plan is based on national standards not designed for activities conducted within the watersheds of an ONRW, relied on the DEIS' inadequate design features and BMPs, and did not contain any forensic monitoring, adequate follow-up contingency plans, or reporting specifications. Further, this Project includes a number of relatively untested activities, such as allowing burn piling within SEZs, for which little or no literature exists regarding environmental effects. The DEIS' Monitoring Plan does not include additional monitoring or follow-up mitigation measures for these specific Project activities.

These WDRs, including the MRP in Attachment C, therefore require 1) implementation monitoring of the BMPs specified in Attachment F, 2) an increased percentage of effectiveness monitoring on Project-specific sites including higher-risk innovative activities, such as the placement and burning of burn piles within the SEZs, 3) photo-point and forensic monitoring, and 4) specified reporting. Results from this effectiveness monitoring will either support current design features or be used to modify them to provide additional protection.

The MRP also requires bioassessment monitoring (with the requisite associated habitat measurements) to reveal if substantial quantities of sediment are delivered to specified watercourses by Project activities. Proposed MRP bioassessment monitoring sites have been chosen downstream of a variety of potentially high-risk Project activities where bioassessment monitoring efforts have already been performed. The rationale for this bioassessment monitoring requirement is detailed in Attachment G.

13. As noted in Attachment A, which is incorporated into these WDRs, certain terms used in these WDRs have a specific, regulatory definition. The definition of these terms as listed in Attachment A may differ from common, dictionary definitions. All other terms shall have the same definitions as prescribed in the FEIS and FEIR, the California Forest Practice Rules (California Code of Regulations, title 14, section 895.1 et seq.), Public Resources Code section 4528, subdivision (f), and Water Code section 13000 et seq.), unless specified otherwise.

14. Basin Plan. Water quality standards and control measures for surface and ground waters of the Lahontan Region are contained in the Basin Plan, which became effective on March 31, 1995. The plan designates beneficial uses for water bodies and establishes water quality objectives (WQOs), waste discharge prohibitions, and other implementation measures to protect those beneficial uses. Attachment B contains

excerpts from the Basin Plan on the beneficial uses, WQOs, and prohibitions applicable to this Project.

15. California Water Code section 13241. Pursuant to California Water Code section 13241 the requirements of these WDRs take into consideration:
    (a) Past, present, and probable future beneficial uses of water:
    These WDRs identify existing surface water quality and past, present and probable future beneficial uses of water as discussed in Finding No. 14 and described in Attachment B. Under certain circumstances during Project implementation or following severe rain storms (e.g., equipment failures, culvert blockages caused by storm events, a tree not falling where intended, etc.), short-term increases in turbidity may occur. However, the Project BMPs and monitoring/mitigation requirements in Attachments C and F have been designed to reduce any short-term adverse effects to less than significant. The Project purpose is to reduce the risk of wildfire, improve forest health, and enhance meadow and aspen habitat. Once these conditions are achieved they will result in improved water quality thereby enhancing the beneficial uses of waters in the Project area from improved forest uptake of nutrients and increased infiltration.
    (b) Environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto:
    Findings No. 7 and 8 describe the environmental characteristics and quality of water available.
    (c) Water quality conditions that could reasonably be achieved through the coordinated control of all factors that affect water quality in the area:
    Adherence to the Project plan, design criteria, monitoring, and mitigation measures in the FEIR and these WDRs will avoid or reduce potential impacts to existing water quality conditions during Project activities. Although cumulative watershed effects already exist within the Lake Tahoe Basin and the analysis area for this Project, a number of currently implemented and proposed efforts under the required NPDES storm water permits and the Lake Tahoe Environmental Improvement Program (e.g., storm water treatment programs, BMP retrofit program, watershed restoration projects, etc.) will improve water quality over time.
    (d) Economic considerations:
    These WDRs authorize the Discharger to, within the public lands on the South Shore of the Lake Tahoe Basin WUI as specified in the FEIS and FEIR, reduce hazard fuels in order to change fire behavior resulting in lower fire severity and reduced rates of spread, provide healthy wildlife habitat, and restore the forest structure to increase resistance to drought, disease, and insects. The Discharger has indicated that, as the chosen alternative will produce revenues from tree thinning only, values generated from the sale of generally smaller trees would not cover the costs associated with tree removal and extensive slash cleanup from past tree mortality. Additionally, CTL harvesting systems are more expensive than WT logging systems and will therefore raise the ratio of costs to revenue even higher. Although other fuel reduction methods, such as helicopter logging, are technically feasible to reduce effects in sensitive areas, they are not economically viable (as noted above, the Project will generate sub-merchantable

material), nor would their use provide commensurate protections. Their use is therefore not required. Although there are potentially additional costs associated with implementing, monitoring, and maintaining the BMPs required by these WDRs in comparison to Discharger proposed design features in the DEIS, there will be substantial increases in prevention of water quality impacts. Attachment F contains detailed, enforceable BMPs. The MRP, in Attachment C, prescribes actions based on an adaptive management system which quickly finds issues before they become excessive, corrects failures and deficiencies, and considers replacement protective measures. Under this system, there is a far greater chance of preventing delivery of sediments into the tributaries of Lake Tahoe. The additional expense of these BMPs and the manpower required to properly maintain them is insignificant compared to the potential economic loss which will occur within the community if the sources of fine sediment delivery are ignored, remain unchecked, and continue to diminish Lake Tahoe's clarity.

The Project itself, however, is a necessity. The loss of economic values to homeowners and the City of South Lake Tahoe, surrounded by the WUI, would be much greater if the Project is not implemented and a large scale fire occurred. Additionally, public agencies would likely incur more significant fire suppression costs. These WDRs accept the Discharger's proposal, when used in conjunction with the Provisions (including the BMPs in Attachment F) of these WDRs, as meeting the best practicable control method for protecting surface water quality from the effects of the Project activities while reducing the risk for loss of private property and economic values, and of fire suppression costs from high-intensity wildfires.

(e) The need for developing housing within the region:
The Project activities, although within the WUI adjacent to urban development, will be conducted entirely on public lands, and therefore will not result in additional housing. The Discharger is not responsible for developing housing within the region, and the Project is not expected to influence any additional growth in the area. These WDRs do not provide for additional capacity in housing development.

(f) The need to develop and use recycled water:
The Porter-Cologne Water Quality Control Act (Porter-Cologne) prohibits the use of recycled water in the Lake Tahoe Basin except for fire suppression where the fire incident commander determines that catastrophic fire conditions exist that would result in severe harm to life, property, or the environment if recycled water could not be used. The only allowable source for this emergency use is the South Tahoe Public Utility District export pipeline which runs through Christmas Valley into Alpine County. This project will neither positively nor negatively affect the need to develop and use recycled water.

16. State Water Board Resolution No. 68-16. This resolution ("Statement of Policy with Respect to Maintenance of High Quality Waters in California") requires that the Water Board regulate discharges of waste to waters of the state to achieve the highest water quality consistent with maximum benefit to the people of the state. It further requires that

discharges meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that a pollution or nuisance will not occur and that the highest water quality consistent with maximum benefit to the people of the state will be maintained.

Porter-Cologne defines "pollution" as an alteration of the quality of the waters of the state by waste to a degree which unreasonably affects either the waters for beneficial uses or the facilities which serve these beneficial uses. Porter-Cologne defines "nuisance" as anything which is: injurious to health, indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property; affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal; and occurs during, or as a result of, the treatment or disposal of wastes.

These WDRs are consistent with Resolution No. 68-16 because it requires compliance with applicable water quality control plans, including applicable water quality objectives, prohibits the creation of pollution or nuisance as defined above, and sets forth conditions that require the implementation of additional management practices (noted in the BMP requirements in Attachment F) to assure protection of beneficial uses of waters of the state and maintenance of the highest water quality consistent with maximum benefit to the people of the state.

The Discharger will monitor the implementation on 100% of its proposed BMPs, employ low impact technology within the SEZs, and rely on a soil sensitivity rating system to limit activities in sensitive areas, to reduce the possibility of sediments getting into the watercourses, and ultimately Lake Tahoe. The Discharger found from the Heavenly Valley Creek SEZ demonstration project (HSEZ) monitoring results that mechanical treatment of SEZs with CTL forwarding and harvesting technology could be implemented under favorable soil moisture conditions (i.e., relatively high soil infiltration capacity and low soil moisture content) without causing ecologically adverse impacts to soil or water quality. The Discharger's Stream Environment Zone Sensitivity Rating System (March 2008, incorporated as Appendix D in the DEIS) was developed to evaluate the sensitivity of treatment units within fuel reduction projects that either contain or are entirely SEZ. The results from the rating exercise for each SEZ treatment unit potentially considered for mechanical treatment within the South Shore project will be compared to the sensitivity rating for the HSEZ using the same criteria. If those SEZ units have an equal or higher rating than the HSEZ site, they will be treated only by hand crews, end-lining, or mechanical over-snow operations.

As discussed in Attachment B, Section 3(d), the Water Board has identified fine sediment to be the primary cause of clarity loss in Lake Tahoe. Project activities such as the construction and re-construction of 9.8 miles of temporary roads in SEZs, the use of up to 29 temporary road watercourse crossings (and a to-be-determined number of skid trail crossings on ephemeral watercourses), the use of 80 landings within the Resource Conservation Areas, pile burning on up to 30% of the SEZ areas to be treated, and dust generation by vehicle and skidding equipment

has the potential to increase delivery of fine sediments to watercourses and ultimately to Lake Tahoe. The WDRs require the best practicable treatment to avoid or substantially lessen the delivery of sediments to waterbodies. The Project's proposed design features and BMPs, when used in conjunction with these WDRs and the incorporated BMP Requirements in Attachment F, require use of the best available technologies to prevent the generation of fine sediments near waterbodies.

17. Discharge Prohibition Exemption. To allow for the timber harvesting activities under these WDRs, the Water Board makes the following findings for a prohibition exemption to the Basin Plan prohibitions (Attachment B) against disturbance or fill within SEZs.

A. The project is necessary for public health, safety, or environmental protection.

The purposes of this Project are to:

- develop defensible space adjacent to communities in the South Shore area where fire suppression operations can be safely and effectively conducted in order to protect homes and communities from wildfires;
- restore forest health in the South Shore area where stands of trees have become sufficiently dense and surface fuels have accumulated to such a degree that wildfires with sustained crown fire and long range spotting could quickly develop, causing severe resource damage and threatening human life and property; and
- restore meadows and aspen stands in the South Shore area in order to reduce the potential for catastrophic wildfire to spread through these areas, to promote maintenance of meadows and aspen stands consistent with the TRPA and Pacific Southwest Research Station's "Aspen Community Mapping and Condition Assessment Report," and to provide wildlife habitat for species that are dependent on meadows and/or aspen.

The Forest Service's Lake Tahoe Watershed Assessment found that current tree density is approximately four times that of 150 years ago and that there has been a pronounced shift away from pine and towards fir in younger trees. The proportion of less fire-resistant white fir and incense cedar has doubled over the past 200 years, while the component of more fire-resistant Jeffrey pine has declined by half. The 2000 Lake Tahoe Watershed Assessment noted that the Tahoe Basin has one of the highest fire ignition rates in the Sierra Nevada, concentrated around the WUI. The Watershed Assessment projected that "should a fire escape initial control attempts under extreme wildfire conditions, at least 50 percent of the area in the resulting burn would likely be crown fire, with overstory tree mortality greater than 50 percent … Even a small wildfire in the basin is potentially a significant event because of the juxtaposition of high ignition potential, high density and value of human developments, and high fuel hazard." The recommendation from this assessment was "A combination of increased fire prevention, education, and strategic fuel hazard reduction will be most effective at reducing the likelihood of damaging fire in the basin." Some Project activities will therefore result in increased

environmental protection and improvement (specifically within the units where riparian enhancement will occur). The Project is therefore necessary for public health and safety, and environmental protection.

B. There is no reasonable alternative, including spans, which avoids or reduces the extent of encroachment.

To reduce the threat of a catastrophic wildfire, the Project's proposed timber harvest activities include the removal of dead, dying, and diseased vegetation and ladder fuels which occur within the 100-year floodplains and SEZs within the WUI. To provide access to these sites and across them to reach other key units, existing permanent watercourse crossings, existing permanent roads, temporary roads, and temporary watercourse crossings/approaches which will be in place more than one year must be constructed/reconstructed and used within the 100-year floodplains and SEZs. To minimize impacts throughout the Project areas, trees have to be skidded across ephemeral channels to reduce the number of longer roads which would otherwise need to be built, and the Discharger must be allowed to pile and burn slash within SEZs which would otherwise not be removed and therefore remain a fire hazard. Finding No. 15(d) describes why alternate routes or methodologies would be less feasible than these proposed actions. The proposed actions also include the use of existing roads, locating landings outside of SEZs, and decommissioning of temporary roads following the Project to reduce or avoid the extent of encroachment into the SEZs and floodplains.

Existing roads, including those within SEZs, must be widened to accommodate the log trucks and chip vans which must be brought in to remove much of the current excess fuel load in the forest. Skid trails and temporary roads within SEZs, and temporary watercourse crossings are also necessary components of any timber operation where the goal is to reduce the threat of catastrophic wildfires, but especially for this Project, where the threat of wildfire within SEZs is currently high. Approximately 966 cubic yards of permanent fill will be added on system roads in or adjacent to SEZs. The FEIS, FEIR, and these WDRs include limits on the amount of new or temporary construction within the SEZs, specify that approximately 50% of the proposed temporary roads be built where roads had previously existed, and specify decommissioning or removal of temporary features following use in any given treatment unit. The Discharger has limited new road construction to temporary roads, with temporary crossings, which will be decommissioned or removed following use in order to avoid temporal impacts on the landscape and avoid the need to place permanent spans or bridges across watercourses.

The proposed actions will also include a combination of hand work and mechanical treatments to reduce or avoid the extent of encroachment by vehicles and road construction into the SEZs and floodplains. The use of hand crews within the SEZs to remove the threat of a catastrophic wildfire involves the labor-intensive piling and burning of dead and dying fuels. Burn piles must be stacked and later burned within SEZs due to the safety limitations placed on hand crews to safely move the slash acceptable distances. Alternately, the use of WT mechanical equipment to remove

the slash from SEZs has more negative consequences than pile burning, due to potential compaction and disturbance of these sensitive soils. CTL equipment, with its lighter impact, must be used in the SEZs in order to remove trees over 20" DBH, which could not be removed by hand, due to the safety limitations for hand crews to lift and move the larger logs.

Because of the reasons discussed above, there is no reasonable alternative which avoids or reduces the extent of encroachment within stream environment zones.

C. The impacts are fully mitigated.

The Discharger used an iterative process to schedule the Project treatment units in order to reduce potential cumulative impacts on any particular watershed and decrease the number of watersheds that exceed the threshold of concern due to fuels treatments. However, short-term impacts may occur from implementation of the Discharger's proposed BMPs and Design Features, as described in the DEIS due to the inability of the features, to effectively retain fine sediments following heavy rainstorms (greater than one inch per hour).

Appendix F, Best Management Practices (BMPs) and Mitigation Measures, describe specific and additional design features and mitigation measures, which, when implemented in accordance with these WDRs, will ensure that significant effects are avoided; where impacts cannot be avoided, these BMPs are sufficiently detailed to ensure that impacts will be fully mitigated.

The MRP, as described in the WDR Attachment C, will be used to determine whether the BMPs are successful in avoiding significant impacts to soil stability, soil productivity, and riparian plant growth. Results from this monitoring will be used to either support the current BMPs, or to require additional protection and mitigation measures in SEZs. The WDRs also require 100 percent of the BMPs associated with all Project activities be properly implemented and functional. The MRP allows the Discharger to use the Forest Service's Best Management Practices Evaluation Program (BMPEP) to test the effectiveness of these BMPs and identify areas which need to be strengthened, and the prescribed Forensic Monitoring outlined in the MRP to determine the source of any impact or potential impact in order to correct the problem. Additional monitoring is included in the MRP to verify the effectiveness of BMPs implemented for high-risk activities; where impacts are noted, the MRP includes an adaptive management strategy to correct the impacts and change future BMPs for these activities. The MRP shall be used to determine if compliance with WDRs has been achieved, and includes inspection checklists, specific provisions for when monitoring must occur, and follow-up procedures to ensure that actions have been documented and mitigation measures have been implemented and performed as intended.

D. SEZ lands are restored in an amount 1.5 times the area of land developed or disturbed by the project.

Approximately 710 SEZ acres will be hand treated or (CTL) mechanically treated under the conditions noted in Finding # 11. Project activities in SEZs will reduce surface and ladder fuels, reducing the potential of loss of riparian and SEZ habitat through a catastrophic fire, and will reduce stand mortality by reducing stand density, thus reducing competition for water and nutrients and increasing resistance to drought, insect invasions, and disease. By removing shade-tolerant fir and cedar while retaining Jeffery, Ponderosa, and Sugar Pine, Project actions will produce a healthier ecological species balance in these sensitive areas. Additionally, the Project includes aspen regeneration components which will reduce encroaching conifers in aspen stands and meadows to restore riparian species dominance within these vegetation types. Approximately 290 acres of aspen areas will be treated and enhanced by reducing conifer encroachment. In effect, Project actions will be restoring natural functionality within the SEZ and riparian areas treated in the Project area.

Currently, up to 0.74 miles of temporary roads already cross SEZs and approximately one-half of a mile of temporary roads cross riparian areas within the Project area. These roads would be cleared to the original road prism to allow passage for logging trucks and chip vans, although some road widening might be required around curves. An additional 0.15 miles of temporary road will be built across SEZ soils and up to 0.14 miles of temporary road will be built through riparian habitat for the Project. Average road width would be approximately 14 feet, to a maximum of 30 feet. A maximum of 23,760 square feet (0.54 acre) of new disturbance in SEZs and 117,216 square feet (2.7 acres) reconstruction on previously-disturbed SEZ soils will temporarily occur due to the construction and reconstruction of these roads. Impacts will be mitigated through implementation of design features and BMPs, which include decommissioning of the temporary roads by ripping and seeding with native seed or, where sufficient rock content exists to prevent ripping of the soils, ground cover such as slash, wood chip or masticated material will be applied, and water bars will be installed to prevent accumulating water on the road surface. Additionally, the prescribed maintenance period for erosion controls on permanent and seasonal roads and associated landings and drainage structures which have not been decommissioned such that they are hydrologically invisible on the landscape will extend for three years following completion of the Project.

The Water Board has determined that the improvement of a minimum of 200 acres for aspen recovery and the decommissioning of temporary roads in the SEZs at or before Project completion offsets the short-term impacts of 3.24 acres of SEZ disturbance. The overall Project activities therefore satisfy the restoration requirement of the prohibition exemption criteria.

18. The EPA's Water Quality Handbook, Chapter 4, section 4.7 Outstanding National Resource Waters (ONRW) – 40 CFR 131.12 (a)(3) notes that ONRWs, such as Lake Tahoe, are provided the highest level of protection under the antidegradation policy. According to this source, BMPs for timber harvesting in ONRW watersheds should include preventive measures more stringent than for similar logging in less environmentally sensitive areas.

19. The Discharger and the Water Board circulated a joint DEIS/DEIR in compliance with the NEPA and CEQA (Public Resources Code Section 21100, et seq.), and other relevant Federal and State laws and regulations. The Water Board has identified a number of potential short-term significant effects, and has therefore prescribed additional protective measures in the FEIR **(anticipated and will be circulated prior to Water Board hearing)** and these WDRs to ensure that any potential impacts are reduced to less than significant. The Water Board hereby certifies the EIR for this Project. The Executive Officer shall file all appropriate notices.

20. The Water Board held a public hearing on _____, in South Lake Tahoe, California, and considered all evidence concerning this matter.

IT IS HEREBY ORDERED that the Discharger must comply with the following:

A. PROHIBITIONS AND EXEMPTIONS GRANTED

1. The Project must not create a pollution, contamination, or nuisance, as defined by Water Code section 13050, subdivisions (k), (l), and (m).

2. The Project must be conducted in compliance with the Basin Plan, as amended, including the prohibitions (unless the Water Board or Executive Officer has granted an exemption) and water quality objectives, and other applicable laws, regulations and plans governing timber harvest and vegetation management activities (refer to Attachment B for Basin Plan excerpts).

3. Based on the Findings made in Finding No. 17, an exemption to the Basin Plan prohibition for placement of fill and/or permanent disturbance in the 100-year floodplains and SEZs, including the placement and burning of burn piles (as defined in Attachment A) within SEZs, is hereby granted for activities and Project units described in Attachment E.

B. DISCHARGE SPECIFICATIONS

1. Receiving Water Limitations. The discharge of surface flows generated from the Project, to surface waters shall not cause the water quality objectives contained in the Basin Plan (refer to section 2 of Attachment B, which is made part of these WDRs), to be exceeded.

2. Effluent Limitations. The discharge of surface flows generated from the Project which are discharged to surface waters shall not contain the following constituents in excess of the following concentrations:

Constituent	**Units**	Maximum Concentration for Discharge to: **Surface Waters**
Total Nitrogen	mg/L as N	0.5
Total Phosphorus	mg/L as P	0.1
Total Iron	mg/L	0.5
Turbidity	NTU	20
Grease and Oil	mg/L	2

If the quality of runoff entering the Project is worse than that of runoff generated within the Project, there should be no statistically significant increase (at a 90 percent confidence level) in pollutants in the water discharged from the project.

C. PROVISIONS

1. The Project must be conducted in accordance with Discharger-submitted Project information and plans and the BMP and Mitigation Measures specified in Attachment F, which is made a part of these WDRs. Where requirements as set forth in these WDRs are more stringent, these requirements must be followed.

2. The Basin Plan requires compliance with specific BMPs that prohibit the removal of vegetation and/or soil disturbance between October 15 and May 1 unless the Water Board grants a variance for specific activities. All areas disturbed by non-winter operation timber harvest and vegetation management activities must be stabilized (as defined in Attachment A) at the conclusion of operations, or before October 15 of every year, whichever is sooner.

   The Project proposes winter vegetation removal operations and associated activities from October 16 through April 30 of any given year of the project. The Water Board grants a variance to the October 15 – May 1 soil disturbance prohibition period for this Project. The variance is based upon the following conditions:

   (a) This variance allows only the specific work described in the FEIS and FEIR in accordance with these WDRs (including the BMPs in Attachment F).
   (b) This variance allows Project-related winter period activities to be conducted between October 15 and May 1 of each year of operation. During this period of operations all Project activities must stop, and the Project sites must be "winterized" when forecast changes in weather patterns would prevent continuation of field operations as noted in "(c)" below. "Winterized" means stabilized to prevent soil movement permanently if site activities are completed,

or temporarily in a manner which will remain effective until activities can be restarted, if site activities are planned to continue later into the year.

(c) During the variance period when adverse weather conditions are predicted by the National Weather Service and prior to the onset of adverse conditions, all soil disturbance activities must cease and the project site must be winterized. "Adverse" conditions refer to conditions that threaten to shut down the project due to rain or increased temperatures, or which would cause siltation and erosion problems.

(d) The Discharger shall comply with specific monitoring report requirements for winter operations as specified in the MRP (Attachment C).

3. The Discharger must conduct monitoring and reporting as specified in the attached MRP (Attachment C), pursuant to Water Code section 13267, and/or as directed by the Executive Officer. Should site conditions or Project activities change during the course of the Project, the Discharger may request a modified monitoring and reporting program, subject to approval by the Executive Officer.

4. Pursuant to Water Code section 13260, subdivision (c), the Discharger must file with the Water Board a report of waste discharge for any proposed material change to the timber harvest and vegetation management activities from those authorized by these WDRs at least 140 days in advance of implementation of any such change. Material changes include but are not limited to:
   (a) Change of project location or size,
   (b) Change to proposed winter period operations,
   (c) Relocation or addition of watercourse crossings.

   The Executive Officer can make a determination in a period shorter than 140 days that the proposal is not considered a material change and therefore can proceed under these WDRs. However, if the proposed change is considered to be material, then the WDRs must be revised prior to implementation of any Project activity. The revision can occur within a shorter period provided that the EIR analyzed the activity.

   Some activities (e.g., the relocation of a specified watercourse crossing to an area of lesser sensitivity) are not considered a material change which would trigger this provision; however, such changes must be reported to, and accepted by Water Board staff at least 10 days prior to implementation.

6. Water Board staff must be allowed reasonable access onto property where timber harvest and vegetation management activities are proposed, or are being conducted, or have been terminated or completed, for the purpose of performing inspections and conducting monitoring. Inspections and monitoring may include sample collection, measuring, and photographing/taping to determine compliance with these WDRs. Such inspections and monitoring are consistent with Water Code section 13267(c), Public Resources Code section 4604(b)(1), and other applicable laws.

   Prior to entering the Project areas, Water Board staff will attempt to contact the

Discharger, persons performing the timber harvest and vegetation management activities, or other on-site representative(s) in order to inform persons onsite of each inspection, and to discuss any safety considerations.

7. The action alternatives proposed in the DEIS include the use of a U.S. EPA-registered borate compound on cut stumps that are 14 inches diameter and greater for the prevention of annous root disease. No other pesticide use is proposed for this Project, nor was any other pesticide application analyzed in the DEIS. Any other pesticide usage proposed for the Project different from that described in the DEIS must be within the scope of what was analyzed in DEIS. Any deviations from that previously analyzed is considered a material change per C.5, and a new Report of Waste Discharge (RWD) must be submitted to address these changes. The new RWD must include the following:
   (a) Type of pesticide
   (b) Method and area of application
   (c) Projected date of application
   (d) Measures that will be employed to assure compliance with the WQOs specified in the Basin Plan.

8. The Discharger must notify the Water Board following completion of the vegetation management and all other associated activities described in the DEIS and these WDRs for this Project, using Attachment D, Notice of Activity Completion Form.

9. These WDRs remain in effect until the Water Board, during a public meeting, rescinds or modifies them. The Discharger may request a rescission at any time for the Water Board's consideration. The Water Board may consider rescinding the WDRs once the project is completed, the Discharger submits a completed Notice of Activity Completion form (Attachment D), and the Project area no longer poses a threat to water quality.

D. REPORTS REQUIRED

1. Construction Plans (including crossing plans, diversion plans, dewatering plans, the Roads Package with the incorporated SWPPP, and BMP requirements (e.g., for items such as flagging and road drainage] for each road that is constructed or reconstructed as well as all stream crossings), and contract specifications must all be submitted to the Water Board for acceptance 30 days prior to commencement of operations in the relevant treatment units. The Discharger shall also provide a USGS 7.5 minute topographic (or equivalent or greater scale) map that clearly indicates the information listed in Item 10 of Attachment K to the Lahontan Timber Waiver, Water Board Resolution R6T-2009-0029 with the above submittal.

2. The Discharger shall submit all Monitoring Reports as described in Attachment C, Monitoring and Reporting Program.

3. The Discharger shall develop the Fire Prescription Plan, including burn piles, underburning prescriptions, etc. in order to avoid adverse effects on soil and water

resources by proposing fire prescriptions in such a way to ensure that fire intensity and duration do not result in severely burned soils (see BMPs No. 25 through 31 in Attachment F). The Discharger shall submit a Fire Prescription Plan to the Water Board for review and approval 30 days prior to any Project-related burning activity.

I, Harold J. Singer, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of a Resolution adopted by the California Regional Water Quality Control Board, Lahontan Region, on _____.

_____
HAROLD J. SINGER
EXECUTIVE OFFICER

Attachments:
- A: Definitions and List of Acronyms
- B: Basin Plan Excerpts
- C: Monitoring and Reporting Program with the following attachments:
  1. Bioassessment Monitoring Requirements
  2. Implementation Monitoring Checklist
  3. Daily Winter Period Monitoring Form
  4. Winter Implementation Monitoring Form
  5. Effectiveness Monitoring Form
  6. Forensic Monitoring Form
  7. Photo-Point Monitoring Form
- D: Notice of Activity Completion Form
- E: **[NOT AVAILABLE AT THIS TIME]** Tables and Maps of SEZ areas showing:
  1. Pile Burning
  2. Equipment use
  3. Temporary or Permanent Roads
  4. Crossings
- F: Best Management Practices and Mitigation Measures
- G: Rationale for Bioassessment Monitoring