
Central Valley Regional Water Quality Control Board

17 August 2020

California Board of Forestry and Fire Protection
Attention: Eric Hedge, Regulations Program Manager
P.O. Box 944246
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CENTRAL VALLEY REGIONAL WATER QUALITY CONTROL BOARD COMMENTS ON PROPOSED DRAFT TETHERED LOGGING OPERATION AMENDMENTS (2020)

Mr. Hedge and Members of the Board of Forestry,

The Central Valley Regional Water Quality Control Board (Central Valley Water Board) appreciates the opportunity to review and provide comments on the Draft Tethered Operation Amendments (draft amendments) 2020 rulemaking as well as the Initial Statement of Reasons (ISOR). We are supportive of the effort to evaluate use of specific tethered logging systems and to improve the clarity and consistency of the existing regulations related to harvesting practices for that equipment.

Central Valley Water Board staff recognize the considerable potential benefits of winch-assisted (tethered) timber harvesting equipment, including improved worker safety, economic benefits over hand-falling and cable yarding on steep ground, and potentially the minimization of soil disturbance as compared to other harvesting methods. Central Valley Water Board staff have had limited opportunity to observe operations using the different types of equipment and methods proposed to be addressed under the draft amendments, making informed comment on the potential for impacts to water quality difficult to provide. There is minimal documented research available to inform on potential impacts to water quality applicable to the operations proposed by the draft amendments.

Staff recently had the opportunity to observe tethered logging operations where eight-wheeled harvester/processors and eight-wheeled forwarders (each with four pairs of wheels) were used. This equipment generally used wheel bands on each pair of wheels that in effect created four sets of tracks; these tracks articulate separately through independent drive and suspension movements which distribute ground pressure to improve traction and minimize compaction. Operations using this eight-wheeled equipment on steep slopes was assessed by staff and found to have acceptable post-harvest soil disturbance conditions and virtually no sediment delivery to watercourses. The minimal impacts observed from use of the eight-wheeled equipment were achieved through:

- Avoiding existing or new construction of typical skid trails,
- Limiting soil disturbance by slash-packing equipment corridors as they advance down slope, resulting in reduced shear-stresses applied to forest soils by the wheels/tracks as

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the cable supports a portion of the tractive forces from the wheels/tracks to the soil and eliminates wheel/track spinning,

- Increased post-harvest ground cover within the unit resulting from in-unit processing,
- Automatic synchronization of winch speed to the machine driving speed, and
- Reduced soil compaction as a portion of the equipment's weight is supported by cable tension.

It is our understanding that the eight-wheeled tethered equipment uses a type of synchronization between the winch and drivetrain that eliminates wheel/track slippage on the ground. The system detects loss of traction in any wheel/track and immediately engages the winch to maintain uphill movement and preventing spinning wheels/tracks which would otherwise contribute to soil loss. Central Valley Water Board staff considers this synchronization a key component of using tethered logging systems for ground-based equipment on steep terrain.

The language in the draft amendments allows for the use of different types of tethered logging systems which have not been assessed by Central Valley Water Board staff. The benefits described above related to the eight-wheeled equipment are not necessarily inherent to other systems. Page 2 of the ISOR suggests that the proposed tether system would increase a machine's traction to "prevent slippage". The draft amendments (page 1, lines 14-16) defines synchronization as "a mode in which a traction aid winch is operated automatically with pre-set pulling and braking forces to maintain cable tension with the forward or reverse speed of the machine". This definition of synchronization is inadequate because; 1) it does not address prevention of slippage, and 2) it is limited in scope and lacks enforceability.

Central Valley Water Board staff have recently reviewed a proposed amendment to a timber harvesting plan to use larger-scale ground-based equipment on steep slopes with a tethering system allowable under the current version of the draft amendments. The tethering system observed included a separate machine that houses the cable and supplies the tension on steep slopes to traditional ground-based equipment such as feller bunchers and skidders. Discussions with project proponents made it clear that slippage could not be eliminated from this equipment, only reduced. The type and degree of synchronization of the eight-wheeled variety described above, that resulted in minimal observed impacts, is not described in the draft amendment language.

Additionally, an important contributor to the benefits observed in tethered operations using eight-wheeled tethered equipment was the use of an in-woods processing head that led to a more even distribution of slash within the unit along with slash packing in the tethered corridors. Corridors that run downslope are inherently very difficult to hydrologically disconnect, therefore Central Valley Water Board staff understand that requiring in-woods processing may be infeasible and not appropriate for all tethering systems. However, the limited projects assessed to date by staff processed logs in-unit and used the slash to stabilize soils including the corridors, which contributed to the overall results of reduced potential erosion and soil transport. There is no requirement in the draft amendments for application of slash on the corridors used/created by the tethered logging equipment and uniform maximum waterbreak spacing of 100 feet is applied in the draft amendments regardless of slope and soil sensitivity. As such, Central Valley Water Board staff are unable to anticipate the potential water quality impacts of projects that do not distribute slash within the unit and slash-pack the tethered corridors.

Central Valley Water Board staff has been researching tethered logging operations and located studies of both the eight-wheeled-type as well as the type proposed in the draft amendments. Excluding the eight-wheeled studies significantly reduces the body of available research with which staff can evaluate the draft amendments for potential water quality effects.

It is the opinion of the Central Valley Water Board that monitoring studies should be conducted that fully investigate all types of tethered operations that would be allowable under the draft amendments prior to finalization of rule changes. Staff suggests pilot operations consistent with any proposed tethered harvesting equipment be conducted through the in-lieu practices already allowed under existing forest practice rules. Such pilot projects would serve to better inform rule makers of any potential negative effects that may arise from such equipment as well as ensure that unnecessary restrictions are not put in place.

Central Valley Water Board staff understand the importance of timely rule revisions to ensure state of the art logging methods are accessible in California. However, in the case of the synchronized and tethered logging operations described in the draft amendments, Central Valley Water Board staff have limited direct observations of the operations or their effects to rely on. When developing specifications for new rule language, we believe all parties would benefit from exposure to all equipment encompassed by the proposed rule language to assess their effects and evaluate necessary and appropriate restrictions.

Should you have any questions, please feel free to contact Central Valley Water Board Forest Activities Program staff: Jonathan Meurer (916) 464-4626
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Regards,

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