



BEST ENVIRONMENTAL PRACTICES: EARTHWORKS & ROADING

1. **Scope:** Timberlands Limited (TL) will monitor compliance with these best environmental practices (**BEP**).
2. **General:** all operations (including post-operations clean up) must comply with the following:
 - (a). TL work prescription;
 - (b). National Environmental Standards for Plantation Forestry (**NES**) see below);
 - (c). resource consent conditions;
 - (d). Heritage New Zealand authority (for archaeological sites);
 - (e). relevant forest practice guides; and
 - (f). any other relevant documents or instructions from TL.
3. **Operations to cease:** operations are to cease and TL contacted:
 - (a). if there is non-compliance with any of the above requirements, or this BEP, and operations must cease. Operations cannot recommence until approval from TL is given.
 - (b). when weather and site conditions will result in unmanageable risks to the environment.
4. **Archaeological sites:** no operations are to be undertaken within archaeological sites unless instructed in writing by TL. If a new archaeological site is discovered or suspected, work in the immediate area is to stop and the site reported to TL. Work cannot proceed until written approval from TL is given.
5. **Reporting:** all environmental incidents and hazards are to be reported to TL as soon as they are discovered.
6. **Endangered species:** sightings of endangered species (e.g. falcon) are to be reported to TL.
7. **Clean machinery:** machinery must be free of dirt and seeds as far as practical prior to moving from an area where there is pampas in either Rotoehu, Tarawera or Whakarewarewa forests to another forest or where required by regional pest management plans or consent conditions.
8. **Removal of materials and rubbish:** all machinery, vehicles, equipment, used parts, wire rope, paint spray cans, grease and oil containers, empty planting boxes, fertiliser bags, and rubbish must be removed from the area at the end of the operation, or sooner if required by TL, to leave the area in a tidy condition to the satisfaction of the TL.
9. **Quarrying BEPs:** for quarry operations refer to TL's quarrying BEP.
10. **Bridges BEPs:** for bridges and culverts refer to TL's river and stream crossing BEP.
11. **NES: the following paragraphs summarise the relevant parts of the NES as apply to earthworks and roading. You must comply with the NES - non-compliance may result in fines, abatement or prosecution.**
12. **Exclusions:** this BEP does not cover battery culverts, drift decks, fords and bridges – you must refer directly to the NES for the relevant requirements.
13. **Sediment control:** sediment originating from forestry quarrying must be managed to ensure that after reasonable mixing it does not cause any of the following effects in receiving waters:
 - (a). any change in colour or visual clarity;
 - (b). making fresh water unsuitable for consumption by stock;
 - (c). any significant adverse effect on aquatic life.



14. **Earthworks stabilisation:** earthworks in any NES orange or red zone that are not required for harvesting within 12 months must be stabilised within 30 days of completion.
15. **Water flow paths:** soil disturbance in water flow paths must avoid accelerated erosion, obstruction, or diversion of water flow.
16. **Setbacks:** earthworks must not occur within 10 m of:
 - (a). a stream or river; or
 - (b). wetlands or lakes larger than 0.25 ha;
unless the earthworks
 - (c). are for the construction and maintenance of a river crossing, a sediment or water control measure, or a slash trap or debris retention structure;
 - (d). within the setback will result in less than 100 m² of soil disturbance in any 3-month period, and are not within 5 m of the water body; or
 - (e). relate to the maintenance and upgrade of existing earthworks.
17. **Fill:** fill must contain no more than 5% (by volume) of vegetation and wood.
18. **Spoil:** spoil must not be deposited:
 - (a). where it may cause failure of the deposited material or the underlying land; or
 - (b). over slash or woody vegetation; or
 - (c). into water or a significant natural area; or
 - (d). onto land in circumstances that may result in the spoil or sediment entering water.
19. **Sediment control measures:** all disturbed soil must be stabilised or contained to minimise sediment entering into any water and causing:
 - (a). the diversion or damming of any water; or
 - (b). damage to downstream infrastructure, property, or receiving environments.
20. **Stormwater control measures:** stormwater, water run-off, and sediment control measures must be installed and maintained.
21. **Batters:** batters, cuts, and side cast construction must use methods that maintain stability.
22. **Culvert diameters:** the minimum stormwater culvert internal diameters for any forestry road or track are:
 - (a). 325 mm in any green, yellow, or orange zone with a land slope of less than 25 degrees.
 - (b). 375 mm in any orange zone with a land slope of 25 degrees or more in any red zone.
23. **Stabilisation:** exposed areas of soil, except firebreaks, that may result in sediment entering water must be stabilised as soon as practicable after completion of the activity, but no later than the last day of the autumn or the spring, whichever is sooner, after completion of the activity.
24. **Stabilisation measures:** suitable measures for stabilisation include:
 - (a). seeding:
 - (b). vegetative cover, mulch, or slash cover:



- (c). compacting, draining, roughening, or armouring by the placement of rock or the use of other rigid materials.
25. **Roads Tracks and Landings:** forestry roads, tracks, and landings must be managed and aligned to:
- (a). divert water run-off and disperse water flows to stable ground and away from constructed fill; and
 - (b). minimise disturbance to earthflows and gullies.
26. **Fuel and oil:** fuel must not be stored, machinery must not be refuelled, and oil must not be changed in any location where fuel can enter water, including:
- (a). within 10 m of a river; wetland or lake
 - (b). on, over, within, or in the bed of a stream or river
27. **Fuel discharges:** fuel must not be discharged into water, or onto or into the bed of a stream or river, or onto or into land in circumstances that may cause fuel to enter water.
28. **Waste oil:** dumping of fuels, oils, and grease (and their containers) in the forest is prohibited. All waste oil products are to be removed from the forest and disposed of at an approved landfill or waste disposal site.
29. **Spill kits:** spill kits (as appropriate) for fuels, oils and chemicals must be kept on site.
30. **Ask TL!** if there is any doubt about an environmental issue, or compliance with this BEP, contact TL for instructions.