

Alternative water supplies for some hill country situations



There is one simple fact with farming – if you don't have good quality water, stock will not do well. In addition to this; how your pastures treated now will dictate how much good quality grass will be on hand in the spring. So how many of you have lost their pastures due to lack of water for cattle? This feels a bit like a catch-22 situation, but the solution may be quite simple in some situations – horizontal bores or spring taps for water supply.

To consider whether horizontal bores or spring taps will work for your situation, you need to have a good understanding of your land resources, geology and erosion processes that are occurring on the property. In general, the best suited areas are usually those associated with slump or earthflow erosion, or where there is a more permeable geological layer overlying a less permeable layer resulting in seepage at the interface.

It is about now I can hear a number of folk out there saying “just put another dam in and the job will be right”. Where slump or earthflow erosion is present the construction of a dam is the worst thing you could do. Not only will it add to the weight loading of the hill slope, it will also tend feed the failure plane. The end result is to accelerate the erosion potential of the hill face.

Horizontal bores and spring taps were very common in the old catchment board days for slump and earthflow erosion control, by de-watering the slip plane. De-watering with a multitude of bores at 15-20 metre spacings reduces the pore pressure, and when combined with space planted trees is a very effective method for stabilizing the hill face. With a bit of lateral thinking, horizontal bores and spring taps can make good alternative water supply in places where there is currently no water.

Horizontal bores are easily installed using a modified post hole borer. The holes are usually about 50-60 mm in diameter and drilled on a gradient up into the hill slope. Depending on the position on the slope relative to the slip plane and the type of erosion present, the holes can be up to distances of 20 to 30 metres (much closer where the water is nearer to the surface). The holes are then lined with perforated PVC pipe of about 25 to 35 mm in diameter and the water removed is collected into a small holding tank which also acts as a sediment trap. One or two troughs, depending on the flow rates, are then run off from the holding tank and are operated by gravity feeding and ball cock. Excessive water from the holding tank should be piped out onto stable grassy ground.



An alternative to horizontal boring, is tapping springs and is best used where the seepage comes to the surface. In this situation the seepage zone is excavated down to the parent material to locate the source of the flow. An envelope of polythene, filter fabric, and a permeable material (such as gravel) surrounding a length of perforated pipe is buried, so to intercept the flow and take it to the surface. From here the water is piped to a small holding tank same as for the horizontal bore.

Alternative water supplies for some hill country situations



Going back to that old pasture management rule of thumb; of how you treat your pastures now will dictate how much grass you have in the spring. There are some soil types that will handle the pastures being cleaned up in the winter, and some that need to be cleaned up now to avoid serious pugging/treading damage. Treading damage can reduce pasture production by up to 40-50% for 3-6 months. Having knowledge of these vulnerable areas on your property will dictate the critical areas needing water for cattle grazing now.

For further information contact LandVision Ltd at www.landvision.co.nz