FROSTFREE NOESPUMPS LTD.

1) How many animals will one pump water?
We recommend 100 cows or 50 cow/calf pairs per pump. It takes them a few days to figure out that they have to take turns. They will figure out their own system of rotation. If required, two or more nosepumps can be installed back to back on the same culvert, giving extra capacity.

2) What about the calves?
Young calves will not operate the pump, but they do learn to operate the pump on the pasture with their mothers. How quickly they learn is partially dependent on the distance the pump is lifting water. In our experience this has not posed a problem in the performance of the calves. As long as they have the cow's milk, and the cow has a good supply of clean, cool water, they perform very well. Whether to supply supplemental water to calves is an individual management decision, depending on circumstances.

3) How deep can the well be?
Our experience so far is with regards to wells drilled from 21 to 72 feet with standing water between 7 and 45 feet, and with dugouts and ponds within these ranges. These operate well, although the higher the lift, the more force is required to push the lever. There are two positions on the pump itself. One position gives a greater mechanical advantage for deeper wells, but also delivers less water per stroke.

4) What is the best application for these pumps?
The best applications will be to convert dugouts (ponds) to a year-round source of water and for wells with standing water at 30 feet or less, although the nosepump will draw from deeper depths as mentioned in question #3. All of these applications provide year-round water for livestock.

5) How many strokes does it take for the cow to get a drink?
The first cow in line gets water on the 4th stroke (with the pendulum on the front position of the hood). It takes 2½ minutes for the water to drain down to the drain hole level. Those drinking within that time do not need to replenish this water. Once the livestock know the water is there, they will pump until it comes up.

6) How long does it take to train livestock to use this pump?
Not very long. Young stock may take longer than cows. The best time to train is prior to frost, when the drain hole could be plugged. Livestock then get a drink with only one stroke (even the first animal). Cows learn very quickly and will train others.

7) What do you need to prepare for and use this pump?
See installation instructions on website.

8) Are there any water restrictions?
That depends on where you live. In AB, there is a water act that applies to all watering facilities. Familiarize yourself with this act before any water installation. A licensed water well driller is required for the installation of any well in Alberta. We hope everyone will use care and attention with their installation in order to protect the water quality for themselves and others. Bentonite is used to seal over the aquifer. If the pump is over a well, a sealed cement pad MUST be put around the site to protect the well from contamination.

9) Are there any government grants for installation of watering systems?
These programs change regularly but at the time of writing, there is a joint Alberta/Canada water program and also PFRA frequently has water programs as well. Contact local conservation groups, watershed groups, Ducks Unlimited, forage associations etc. to see if you would qualify for support by keeping livestock out of water sources.

10) What will it cost to install this pump system?
This will partially depend on your local costs and how much of the work you can do yourself. The cost breakdown will include drilling for a well or trenching for a dugout, the cost of the culvert (typically a 24" culvert, 21 ft. long), the pump (complete with cylinder & foot valve), the steel lid for the culvert, insulation for the culvert and lid, and finally a platform for the cows to stand on (a 20' x 20' cement pad with styrofoam insulation underneath works very well). ***The total installation would typically be between $2500 - $3500 Canadian for a dugout or shallow well.*** If the well is deeper, the cost will naturally go up. If a well is being drilled, make sure the driller understands the system and that as large a volume of water is not required as would normally be required for a pressure system. In some cases wells have been drilled deeper than necessary in order to get a large volume of water. This unnecessarily adds cost.

11) What do water well drillers use to seal the hole from contamination outside the culvert?
They use bentonite. If you are not in an area that requires a licensed driller, it would be a good recommended practice to use bentonite to make this seal to prevent contamination from surface water.

12) How much water pumps into the trough with each stroke of the lever?
Approximately one half litre (1/2 quart) of water comes up with each full stroke. This is about what the animal can swallow at one time, and therefore they don't leave water in the trough when they quit drinking. This helps prevent freezing in the trough. Water DOES NOT drain out of the trough, as this would contaminate the water source.

13) Why doesn't this pump freeze?
We depend on geothermal heat from the ground to heat the wide diameter culvert. For this reason, we need the culvert in the ground deep enough to provide this heat (usually 20'). The culvert is insulated to retain this heat. There is a drain hole in the pipe 5 ft. down from the pump. When the cows walk away, the water slowly drains down to this depth. Water in the trough DOES NOT drain down (to protect the water source from contamination) but the cows leave very little water in the trough and the tiny bit of ice formed does not accumulate because the action of the cows drinking melts any ice in the bottom of the trough. We also recommend insulation under a cement pad around the pump. This prevents frost from being driven down to a level that could freeze your system.

14) Is this pump environmentally friendly?
Yes. It allows producers to keep their cattle out of water sources, providing the cattle with clean water as well as those downstream from the source. The nipple in the trough prevents any drain back that could contaminate the water source. An excellent riparian management tool.

15) What is the temperature of the water and how does that affect the cattle?
The water is always cool and clean. The temperature of water delivered from this pump should be optimal for performance according to research. Well water will come out of the ground between 50-56 º F. (13 ºC) Extensive records of well-water temps have shown that the water temp between depths of 9 and 18 m. is essentially constant throughout the year.

16) Will bison and horses use this pump?
We have a number of customers using the pump for bison and horses. Our own horses are also using the pump. Horses seem to be a bit more challenging to train, and may not be willing to lift water from the deeper depths (eg. 30 feet) that cattle are more than willing to do.

17) Will other animals use the pump, eg. sheep, goats, sows etc.?
We have no experience to date with other animals.

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Quantity / Price	Item
1 — $1195	Complete Pump (excluding pipe & pullrod)
1 — $275	24" Steel Lid (instructions to build yourself available)
1 — $150	24" Insulation Kit (for single 4' sleeve & lid) (instructions to build yourself available)