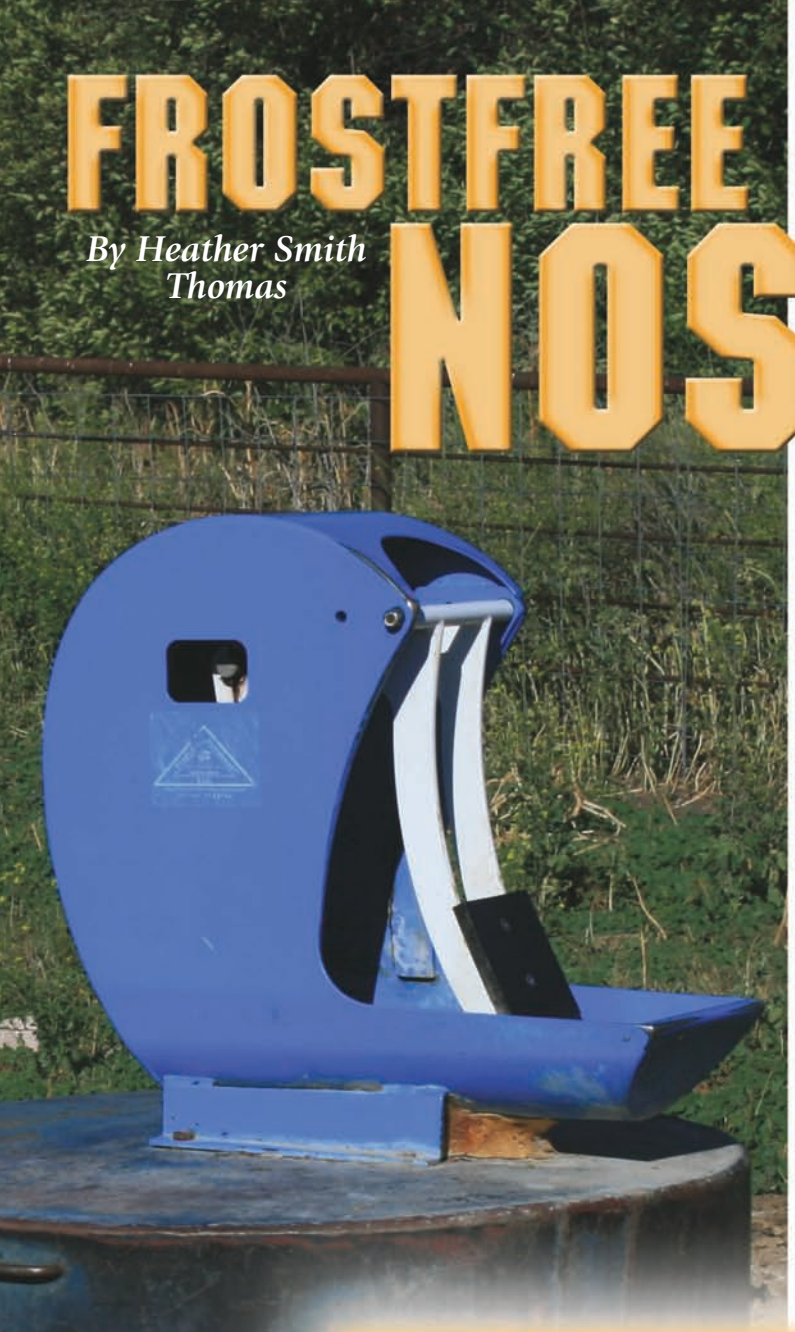
FROSTFREE NOSEPUMP

Enables Cattle to Water Themselves

By Heather Smith Thomas



Cold weather presents challenges for watering cattle, especially in areas with no electricity for pumps or tank heaters. Jim Anderson, at Rimbey Alberta, solved this problem by creating a system in which cattle pump water for themselves from shallow wells, ponds or pressure systems—water that never freezes even at 40 below zero.

Anderson's innovation is a piston pump, like the old-fashioned hand pump that you move the handle up and down to lift water. "We modified this so cattle push a lever with their nose. This operates the piston pump by raising and lowering the piston in the cylinder, the same as a handle used to do. We capture enough geothermal heat from the ground, and contain that heat all the way up to the surface, to keep the water in the cylinder from freezing up," he says.

The waterer is a small, enclosed basin atop a vertical culvert. The culvert has two feet sticking above ground level, going down to whatever depth is required to make use of ground water or the bottom of a pond or dugout nearby (water from the dugout is piped underground to the bottom of the culvert). A buried collection tank from a spring works also. A regular well can be used, as long as the water level comes to within 50 (and preferably 30 or less) feet from the surface. On a drilled well, a nosepump requires about two gallons per minute to water a herd of cows.

"Some ranchers use large pipes, but the typical installation is a road culvert at least 24 inches in diameter, set in the ground at least 20 feet. Factors that determine how much geothermal heat you'll gain is how deep you go, and how big a pipe you take to that depth. The bigger the pipe, the more opportunity for heat to rise, to keep the water pipe in the center warm enough," explains Anderson.

4-UP NOSEPUMPS CAN PROVIDE WATER FOR A SIZEABLE HERD

David Woodworth raises cattle near Melita, Manitoba, where winters can be very cold. "We've used a frostfree nose-pump for three winters, and the cows do all the work to water themselves," says David. This saves money, time and labor.

"We don't have to depend on electricity, wind, or sunshine for solar power. This was the most reliable way to provide water and it was very easy to install. Ours is sitting on a 30-inch well crib, 30 feet deep. The well has limited capacity, but our installation

creates 700 gallons of storage. It used to be an old wooden well crib about eight feet deep that watered 30 or 40 cows. When we re-did the well and put in the nose-pump, we were able to water 130 cows," explains Woodworth.

"The only problems we've ever had is if it's really cold and windy, because ours is out in the open. Occasionally the top part will freeze up. When cows are using it, however, you can tell if it's working without checking it, because they really bang it. As long as you can hear it, you know it's working. When it's really cold and windy I check it to make sure there's no ice build-up. If there's a little ice, it only takes about five seconds to clear it away. All you do is give it a whack with a rubber mallet, clean the ice out, and it's good to go again."

Cows quickly learn how to use it. "The first year we put it in, I had a bunch of heifers in that pasture and spent part of a day teaching them about it. When they'd come up to drink I filled the trough and held my hand on the nose lever, and when a heifer was drinking I'd let it go against her nose. They soon realized that's where the water came from," says Woodworth.

During winter with 130 cows watering on it, some hadn't used it before, but they soon figured it out. "I never even went close to them. There were enough of them in that group that knew how to use it, and they showed the others how it works," he says.

Last summer his bulls were in that pasture and even though there's a slough nearby, they preferred to use the nose-pump and fresh, clean water. Fencing off water sources and providing an alternate watering situation is healthier for cattle, and more environmentally acceptable.

"I REALLY LIKE THE NOSE-PUMP BECAUSE IT DOESN'T REQUIRE ANY MAINTENANCE AND WAS CHEAP COMPARED TO ANYTHING ELSE AVAILABLE." – CRAIG DUNMONTEL

Mike Possenroth runs 200 cows near Bentley, Alberta and was the first person to use a nose-pump on a dugout. "Jim Anderson thought this would work, if someone was willing to try it. I'd been watering cattle from a dugout but it was fenced off so they couldn't fall through the ice," says Possenroth.

His procedure was to drill a hole in the ice every day with an ice auger, then use a gasoline engine to run a generator to run an electric pump. He'd pump water from the dugout into bathtubs for the cattle. He'd fill the gas tank on the generator and knew it would run for exactly two hours and 14 minutes. He'd go do other chores, constantly keeping track of what time it was—because if he let it run too long and run out of gas at 30 below zero, everything would freeze up.

His nose-pump saves all that trouble. "It' 50 yards from the fenced dugout. We positioned it where the ground sloped away so no runoff goes back into the dugout. We dug the hole and put the upright culvert in, and hooked the water line onto it. We backfilled the hole as we went toward the dugout, laying pipe in the trench as we went. As we approached the dugout, the backhoe made the last swipe and we flopped the pipe down into the water and buried it again. We went back to the culvert, and there the water was," he says. The water rose to the same level as the pond water.

"Many people are using dugouts now; they make a dugout and put the trench and pipeline in before the water collects. You have time to set the pipe exactly how you want it," explains Possenroth.

It's a good way to have clean, fresh, safe water for cows, keeping them out of the pond or dugout. "The grass is tall on the banks and works as a filter system for runoff. Ours is just filled with runoff, collecting from the hills around it. This is usually enough water to serve the cows' needs in winter, and for quite a bit of the summer, too. We mostly use this pasture in the winter, with as many as 150 cows," he says.

It's entertaining to watch cows pumping water. Anderson demonstrates the pump at various trade shows by using a mechanical cow he built. It stands at the nose-pump, constantly pushing the lever.

Mike Nichols, in eastern central Alberta, has used nose-pumps for several years and has three of them. He mounted two on the same culvert, watering 130 cows all winter. He fenced off a dugout for the water source, and poured a cement pad around the culvert like Anderson suggested, to insulate the ground—so cattle traffic won't drive the frost down.

"My father and I have one of his first pumps. I use ours in the summer, too, and you can set it so it doesn't drain back down the pipe so far (to keep from freezing), making it easier for cows to pump," says Nichols.

"I used to water out of dugouts, and one winter I'd just chopped a new ice hole before a bad storm. Snow covered the hole and I was trying to find it again, tapping the ice with my ax-handle, and one foot went into the hole, all the way to my hip. Luckily I was able to pull myself out, but my leg was nearly frozen solid before I could get back into my tractor cab. Ever since I've had the nose-pumps I haven't lost any more cows in the dugouts and I haven't slipped through the ice either!"

Nichols uses another pump in his bull pasture. "It's the only thing they haven't wrecked. They have 300 acres to play and fight in and they haven't been able to wreck the nose-pump. It's built to last."

Craig Dunmontel, a rancher in southwest Saskatchewan, has three pumps mounted on one culvert, serviced by a 46-foot well, providing 300 cows with water. "The water rises to about 14 feet of the ground surface. Before I put in the well, our water source was a spring-fed dugout, down in a coulee. I had to drive over there daily to break ice and it's a bad place to get down into. When we dug our well we looked into solar power and other options, and those would have cost $14,000 and up. I wasn't too excited about having wires and things that might break down, and didn't want to be checking on a solar system every day. I really like the nose-pump because it doesn't require any maintenance and was cheap compared to anything else available," says Dunmontel.

For more information, e-mail info@frostfreenosepumps.com or check the website www.frostfreenosepumps.com