

# What Happens When a Piston Pump Runs Dry

## PNEUMATIC AIR CANNOT ENTER WELL

- A piston pump will continue to operate until shutoff, even if there is no liquid left to pump.
- Low speed and low heat generation mean there is no damage to pump or well/sump.
- By design, no compressed air can enter the well.
- No connection between air input and liquid discharge.
- All pneumatic air enters and vents outside/above the well/sump.
- No air in well; air not used to eject liquid.
- See drawings, lower right.

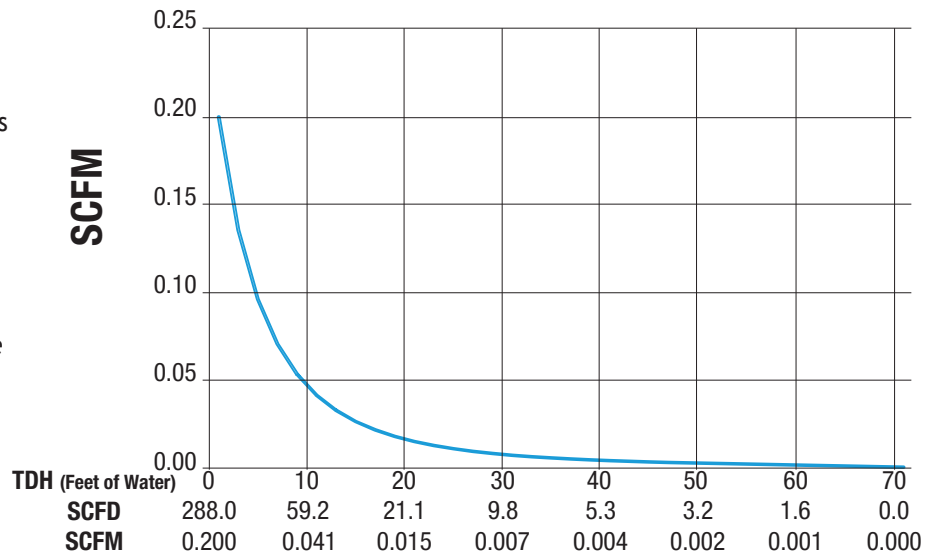
## SMALL AMOUNT OF LANDFILL GAS

- A dry-running piston pump will pump a small amount of landfill gas (see graph).
- As pressure on TDH increases above drive-piston check valve, gas decreases.
- At TDH of 70 feet, SCF is zero.
- Average amount of gas pumped in run-dry operation is 9 SCF/day at 31 feet of water.

## FLUID IS ALWAYS IN DOWNHOLE PUMP

- Fluid is pumped out when replacement fluid is sucked in, conveyer-like action.
- Always a column of fluid in pump & eductor pipe rising to surface discharge tee.
- When no more fluid at intake, fluid remains in pump and tube.
- Fluid in pump restricts gas being pumped.
- Fluid weighs down both check valves, restricting their ability to open.
- See drawings on back.

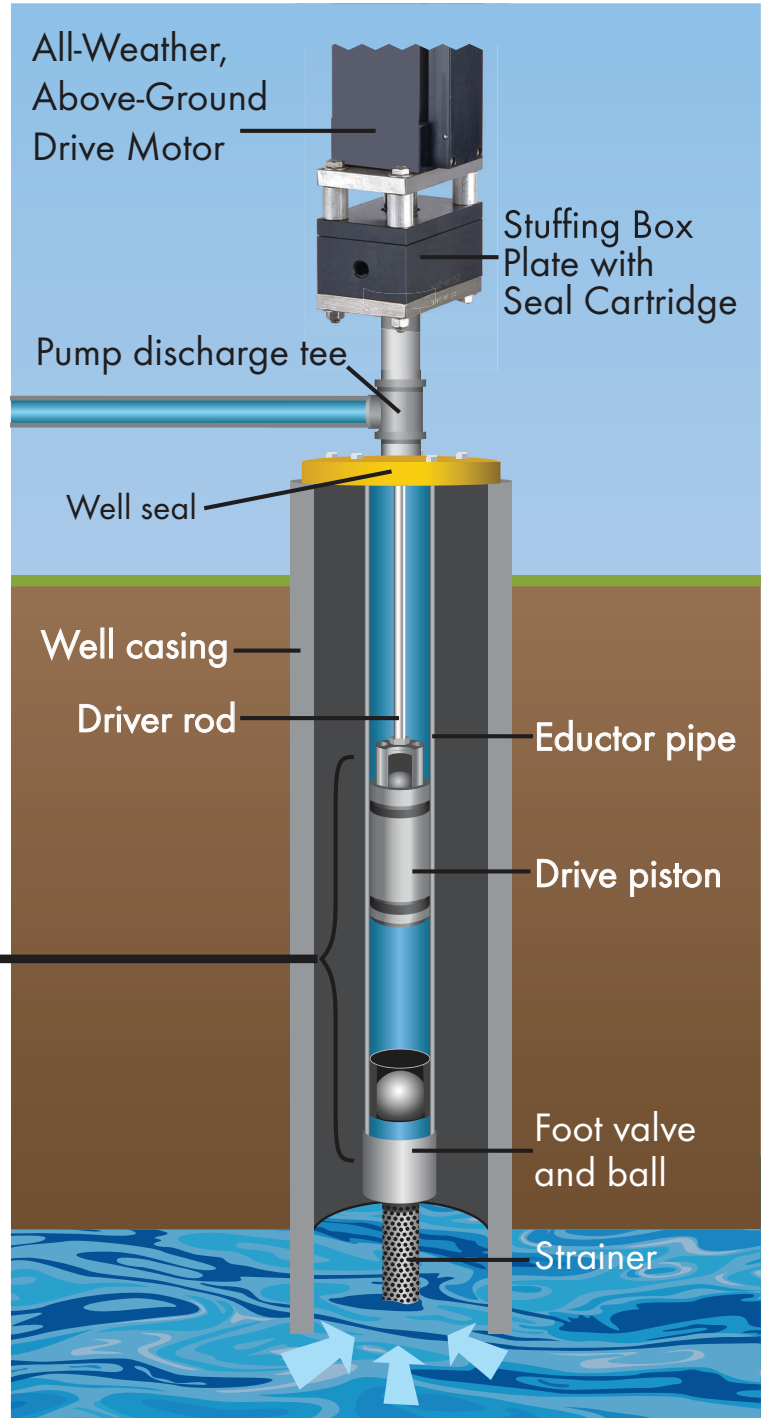
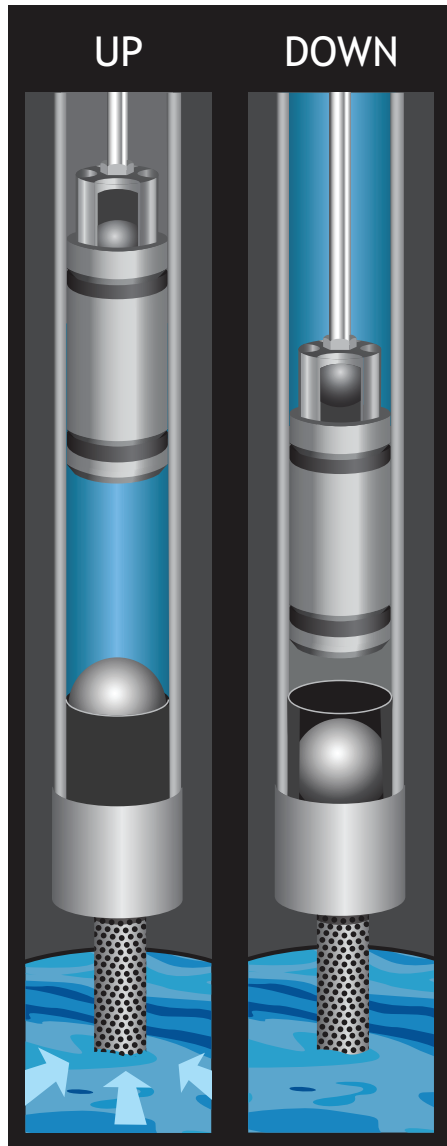
### Pumping Gas versus TDH



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Fact Sheet #23

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